CURATED PAST EXAM ITEMS
- Questions -

GI 302 – General Insurance in the U.S.

Important Information:

- These curated past exam items are intended to allow candidates to focus on past SOA fellowship assessments. These items are organized by topic and learning objective with relevant learning outcomes, source materials, and candidate commentary identified. We have included items that are relevant in the new course structure, and where feasible we have made updates to questions to make them relevant.
- Where an item applies to multiple learning objectives, it has been placed under each applicable learning objective.
- Candidate solutions other than those presented in this material, if appropriate for the context, could receive full marks. For interpretation items, solutions presented in these documents are not necessarily the only valid solutions.
- Learning Outcome Statements and supporting syllabus materials may have changed since each exam was administered. New assessment items are developed from the current Learning Outcome Statements and syllabus materials. The inclusion in these curated past exam questions of material that is no longer current does not bring such material into scope for current assessments.
- Thus, while we have made our best effort and conducted multiple reviews, alignment with the current system or choice of classification may not be perfect. Candidates with questions or ideas for improvement may reach out to education@soa.org. We expect to make updates annually.

GI 302 Learning Objective 2 Curated Past Exam Questions

GIFREU, Fall 2020, Q2

(*5 points*) Insurance companies in the U.S. need to comply with the prevailing insurance laws in the state they are doing business.

(a) (*1 point*) Describe two sources of state insurance laws that regulate insurance company operations for a state.

ANSWER:

A state's Department of Insurance (DOI) is the primary agency in charge of insurance industry regulation. However, state legislatures have significant influence in how state DOIs carry out insurance regulation.

(b) (*1.5 points*) Describe three significant ways that state legislator actions influence insurance regulation in each state.

ANSWER:

A regulatory structure that includes a system of checks and balances can help control the negative effects of errors in insurer solvency regulation. The National Association of Insurance Commissioners (NAIC) provides a system of checks and balances to the U.S. state-based regulatory system.

(c) (*1.5 points*) Describe how the NAIC provides these checks and balances.

ANSWER:

(d) (*1 points*) Describe two activities undertaken by that NAIC that assist state regulators in their oversight of the insurance industry.

ANSWER:

GIFREU, Fall 2020, Q21

(*5 points*) All over the world, insurance companies are highly regulated and closely supervised.

(a) (*1 point*) Describe two reasons why regulators closely monitor and regulate insurance company operations.

ANSWER:

All state Departments of Insurance (DOIs) in the U.S. regulate, to some extent, the prices that insurance companies charge for various insurance products and the type of coverage they offer to the public. State DOIs have legal authority to disapprove and require withdrawal of a premium rate or coverage for a variety of reasons.

(b) (*1 point*) Identify four reasons why a state DOI may disapprove a proposed rate or coverage.

ANSWER:

In each state, the DOI has an Insurance Commissioner that is responsible for the operations of the DOI. In some states, the Insurance Commissioner is elected to office. In other states, the Insurance Commissioner is appointed to office.

(c) (*1.5 points*) Provide three arguments in favor of an Insurance Commissioner being elected to office.

ANSWER:

(d) (*1.5 points*) Provide three arguments in favor of an Insurance Commissioner being appointed to office.

ANSWER:

GIFREU, Spring 2021, Q3

(*5 points*) In the U.S., regulation of insurance companies and the business of insurance is primarily a state function. However, the state regulators do not act with complete freedom.

(a) (*1.5 points*) Describe three circumstances where the U.S. Constitution can void state laws and regulations.

ANSWER:

The McCarran-Ferguson Act clarified that states have primary regulatory authority over the business of insurance. However, the McCarran-Ferguson Act did not clearly define what activities constitute the business of insurance. The 1979 U.S. Supreme Court decision *Group Life and Health Insurance Co. v. Royal Drug Co.* is used to determine whether an activity constitutes the business of insurance.

(b) (*1.5 points*) Describe the three criteria set out by this Supreme Court decision.

ANSWER:

The McCarran-Ferguson Act allows the federal government to become involved in the regulation of the business of insurance if states are not regulating certain areas or if federal legislation applies specifically to insurance. Such federal involvement is illustrated by the Risk Retention Act (RRA).

(c) (*0.5 points*) Identify the crisis that prompted Congress to enact the RRA.

ANSWER:

A federal task force investigated the causes of this crisis.

(d) (*0.5 points*) Identify two of the factors that caused this crisis as reported by the task force.

ANSWER:

(e) (*1 point*) Describe how the RRA affected the business of general insurance.

ANSWER:

GIFREU, Spring 2021, Q13

(*6 points*) Within each state, an agency commonly known as the Department of Insurance (DOI) regulates insurer operations.

(a) (*1 point*) Describe four regulatory insurance functions that every state DOI regularly performs.

ANSWER:

DOIs are created by state legislatures to administer state insurance laws and adopt insurance regulations.

(b) (*2.5 points*) Describe five ways that state legislatures can influence insurance regulation carried out by DOIs in each state.

ANSWER:

DOIs are assisted by the National Association of Insurance Commissioners (NAIC). One way that the NAIC assists DOIs is through the DOI accreditation program.

(c) (*1 point*) Describe four ways in which the NAIC assists DOIs in the conduct of their insurance regulatory function, other than through the DOI accreditation programs.

ANSWER:

(d) (*1 point*) Identify four activities that are part of the NAIC DOI accreditation review.

ANSWER:

(e) (*0.5 points*) Identify two key standards that state DOIs must meet in order to receive accreditation.

ANSWER:

GIFREU, Fall 2021, Q17

Note: Parts (c) and (e) are not in GI 302.

(*4 points*) The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act) was enacted in the U.S. to modernize and reform financial services regulation.

The Dodd-Frank Act attempted to create national uniformity in two areas of insurance regulation.

(a) (*0.5 points*) Identify these two areas of insurance regulation.

ANSWER:

(b) (*0.5 points*) Explain how the Dodd-Frank Act affects one of the two areas of insurance regulation identified in part (a).

ANSWER:

~~The Dodd-Frank Act included the creation of the Federal Insurance Office (FIO) within the U.S. Treasury. The Dodd-Frank Act authorizes the FIO to preempt state laws under certain conditions. However, there are six steps that the FIO must take before a state law may be preempted.~~

~~(c) (*1.5 points*) Identify three of the six steps.~~

Part (c) is not in GI 302.

~~ANSWER:~~

The FIO's power of preemption of state law is limited. It may not preempt state insurance laws governing certain functions of the business of insurance.

(d) (*1 point*) Identify four such functions included in the limitation.

ANSWER:

~~The FIO's four primary functions are monitoring, advisory, administrative and reporting.~~

~~(e) (*0.5 points*) Identify one of the roles of the FIO under its administrative function.~~

~~(f)~~ *Part (e) is not in GI 302.*

~~ANSWER:~~

GIFREU, Spring 2022, Q8

(*5 points*)

(a) (*1.5 points*) Provide three reasons why insurance markets have been found to be imperfectly competitive.

ANSWER:

(b) (*1 point*) Identify the following with respect to Fair Access to Insurance Requirements (FAIR) plans in the United States:

(i) the risk-taking entity

(ii) the business addressed

ANSWER:

(c) (*1 point*) Identify the following with respect to *surplus lines* in the United States:

(i) the risk-taking entity

(ii) the business addressed

ANSWER:

In the United States, insurance is mainly regulated by the states. However, the federal government has involved itself in the regulation of insurance. One such example is the Gramm-Leach-Bliley Act of 1999 (GLB).

(d) (*0.5 point*) Describe the key issue that GLB addressed with respect to banks writing insurance.

ANSWER:

(e) (*1 point*) Explain how GLB addressed this key issue.

ANSWER:

GIFREU, Spring 2022, Q14

(*7 points*)

(a) (*0.5 points*) Identify two common justifications for the regulation of insurance.

ANSWER:

The McCarran-Ferguson Act (1945) requires that the Sherman Act, the Clayton Act and other federal Acts apply to the business of insurance only if the states are not regulating the activities described in these acts. However, there are two exceptions to this requirement.

(b) (*1 point*) Describe these two exceptions.

ANSWER:

The following concepts have been used to explain insurance regulatory failures:

- Regulatory fallibility
- Regulatory forbearance
- Regulatory capture

(c) (*2 points*) Define each of the three concepts identified above.

ANSWER:

(d) (*1 point*) Explain how regulatory forbearance may affect the costs borne by policyholders and insurance guaranty funds.

ANSWER:

Even though individual states are the primary regulator of insurance, there is substantial uniformity of insurance regulation among the states.

(e) (*1 point*) Describe two reasons for this.

ANSWER:

(f) (*1.5 points*) Provide arguments for and against the state system of insurance regulation versus a federal system.

ANSWER:

GIFREU, Fall 2022, Q13

Parts (b) and (c) are not in GI 302.

(*4 points*) Two areas of insurance regulation that the Dodd-Frank Act addressed were reinsurance and non-admitted insurance.

(a) (*1 point*) Describe one of the changes to the regulation of non-admitted insurance that was introduced in the Dodd-Frank Act.

ANSWER:

~~(b) (*1 point*) Describe one type of state reinsurance regulation for non-domiciled insurers that is preempted under the Dodd-Frank Act.~~

Part (b) is not in GI 302

~~ANSWER:~~

~~The Dodd-Frank Act established the Federal Insurance Office (FIO) within the U.S. Treasury. FIO's scope of authority extends to most lines of insurance.~~

~~(c) (*0.5 points*) Identify two lines of business that are not under the FIO's scope of authority.~~

Part (c) is not in GI 302

~~ANSWER:~~

One of the FIO's primary functions is monitoring.

(d) (*1 point*) Describe one aspect of the business of insurance that the FIO is tasked to monitor.

ANSWER:

To monitor the business of insurance, the FIO is authorized to require any insurer to submit data or information as specified by the FIO. However, the FIO does not have enforcement authority over data submissions.

(e) (*0.5 points*) Explain how compliance with FIO data requirements are enforced.

ANSWER:

GIFREU, Spring 2023, Q3

(*4 points*) Historically, states have had primary responsibility for the regulation of the insurance industry in the United States. However, the federal government and courts in general, and the Supreme Court in particular, have played significant roles in enacting or interpreting insurance regulation.

The Supreme Court has been instrumental in defining the business of insurance. In a number of cases (*United States v. south-Eastern Underwriters Association*, *Robertson v. California*, *SEC v. Variable Annuity Life Insurance Co*., *SEC v National Securities, Inc*.) the Supreme Court helped identify insurer activities that are and are not part of the business of insurance.

(a) (*0.5 points*) Describe two insurer activities that the Supreme Court identified as part of the business of insurance.

ANSWER:

(b) (*0.5 points*) Describe an insurer activity that the Supreme Court identified as <u>not</u> part of the business of insurance.

ANSWER:

In the case of *Group Life and Health Insurance Co. v. Royal Drug*, the Supreme Court ruled that for an activity to be recognized as the business of insurance it must have one or more of three specified characteristics.

(c) (*1.5 points*) Describe these three characteristics.

ANSWER:

The federal government has also played a role in reinsurance regulation. The Dodd-Frank Act contains several provisions that preempt state laws governing reinsurance arrangements.

(d) (*1.5 points*) Describe two such provisions.

ANSWER:

GIFREU, Spring 2023, Q13

(*4 points*) In the United States, insurance regulation includes the concept of non-admitted insurance.

(a) (*1 point*) Define non-admitted insurance.

ANSWER:

The Dodd-Frank Act includes provisions relating to the regulatory reform of non-admitted insurance coverage.

(b) (*1 point*) Describe the intended purpose of these provisions.

ANSWER:

(c) (*2 points*) Describe two of these provisions.

ANSWER:

GIFREU, Fall 2023, Q2

Part (e) is not on GI 302

(*6 points*) In the United States, insurance regulation is primarily a state-based system. The case of *Paul v. Virginia* in 1869 was the first legal test of the state-based system.

(a) (*2 points*) Provide the following information regarding the case of *Paul v. Virginia*.

(i) Issue underlying the case

(ii) Ruling of the U.S. Supreme Court

ANSWER:

(b) (*1.5 points*) Explain why the McCarran-Ferguson Act of 1945 (MFA) was required to affirm the constitutionality of the state-based system.

ANSWER:

The Federal Insurance Office (FIO), as established in The Dodd-Frank Act of 2009, has the power to preempt regulatory measures undertaken by a state.

(c) (*1 point*) Describe the condition under which the FIO may preempt state measures of insurance regulation.

ANSWER:

The FIO's power of preemption of state law is limited. It may not preempt state insurance laws governing certain functions of the business of insurance.

(d) (*1 point*) Identify four such functions included in the limitation.

ANSWER:

~~There are six preconditions required of the FIO prior to preempting a state law.~~

Part (e) is not on GI 302

~~(e) (*0.5 points*) Identify two of these preconditions.~~

~~ANSWER:~~

GIFREU, Fall 2023, Q11

(*4 points*)

(a) (*1 point*) Define the following terms as they apply to insurance companies:

(i) Technical insolvency

(ii) Bankruptcy

ANSWER:

Financial examinations are critical to the process of solvency regulation. In the United States, the NAIC encourages the use of association examinations.

(b) (*1 point*) Provide the following:

(i) Definition of an NAIC association examination

(ii) Purpose of an NAIC association examination

ANSWER:

NAIC financial examinations fall into two main categories: full-scope and limited-scope. Full-scope examinations are at regularly scheduled intervals. Limited-scope examinations may occur between full-scope examinations. One of the circumstances that can prompt a limited-scope examination includes unusual results from financial statements, NAIC RBC ratios, IRIS ratios or a FAST analysis.

(c) (*1 point*) Identify four other circumstances that could prompt a limited-scope examination.

ANSWER:

Regulatory action may be required if policyholders or the general public could be harmed by an insurer's financial condition. One form of regulatory intervention specified by the NAIC is mandatory corrective action. Under mandatory corrective action, the insurance commissioner can order an insurer to take specific actions.

(d) (*1 point*) Identify four such actions.

ANSWER:

GIFREU, Spring 2024, Q3

(*3 points*) The NAIC's Support and Services Office (SSO) provides a wide range of services. One of these services is to collect information in several databases regarding the insurance industry's marketplace behavior.

(a) (*1 point*) Describe two types of information regarding marketplace behavior that is included in these databases.

ANSWER:

The SSO also provides a range of training and education services.

(b) (*1 point*) Describe two of these types of services.

ANSWER:

The NAIC's Government Relations Office (GRO) handles certain government relations activities.

(c) (*1 point*) Describe two activities of the GRO.

ANSWER:

GIFREU, Spring 2024, Q13

(*5 points*) An individual in the United States with $2 million of capital available has proposed starting a surplus lines operation for insuring high-performance vehicles. The individual has significant experience as a broker for automobile insurance and is the founding owner of a successful automobile dealership for high-performance vehicles.

Evaluate this business proposal relative to each of the following considerations:

(i) (*0.5 points*) Risk characteristics for surplus lines coverage

(ii) (*1 point*) Market characteristics for surplus lines coverage

(iii) (*2 points*) Key features of state surplus lines regulations

(iv) (*1.5 points*) Recommended next-steps to move this proposal forward

ANSWER:

GIFREU, Fall 2024, Q2

(*3 points*) In the United States, one of the procedures included in insurer solvency regulation is a state examiners' bench audit.

(a) (*1 point*) Describe what is included in this procedure.

ANSWER:

Another procedure used is a special association examination.

(b) (*2 points*) Describe two of the three situations that can trigger use of this procedure.

ANSWER:

GIFREU, Fall 2024, Q11

(*4 points*)

(a) (*2 points*) Describe how each of the following may influence insurance regulation.

I. Consumers

II. News media

III. Insurance Regulatory Examiners Society (IRES)

IV. Insurance industry trade associations

ANSWER:

(b) (*1 point*) Describe two ways that market conduct regulation can be used to protect insurance consumers.

ANSWER:

Departments of Insurance (DOIs) require funds to operate.

(c) (*1 point*) Identify four sources of funding for DOI operations.

ANSWER:

GI 302 Learning Objective 3 Curated Past Exam Questions

GIFREU, Fall 2020, Q7

(*4 points*) JC Insurance (JCI) is a general insurer in the United States. You are given the following ceded reinsurance information for JCI as of December 31, 2019. Amounts in the tables are taken from JCI's Schedule F Part 3 exhibit and are in thousands.

Reinsurer	Reinsurance Recoverable on Paid Losses and Paid Loss Adjustment Expenses					
	Current	Overdue				Amounts in Dispute
		1 to 29 Days	30 to 90 Days	91 to 120 Days	Over 120 Days	
X Re	200	65	70	60	30	20
Y Re	300	45	55	75	20	25
Auto Pool	415	0	0	0	0	0

Reinsurer	Amounts Received Prior 90 Days	Known Case Loss & LAE Reserves	IBNR Loss & LAE Reserves	Unearned Premiums	Funds Held by Company Under Reinsurance Treaties
X Re	35	240	115	130	0
Y Re	55	185	60	0	0
Auto Pool	80	460	135	275	30

- JCI has no other reinsurance.
- None of the reinsurers are affiliated with JCI.
- All of the reinsurers are authorized in JCI's state of domicile and unrated.
- Amounts for Auto Pool reflect cessions to the mandatory automobile residual pool for which JCI acts as a servicing carrier.
- *Amounts in Dispute* are included in the amounts shown for *Reinsurance Recoverable on Paid Losses and Paid Loss Adjustment Expenses*.
- None of the amounts in dispute are overdue.
- JCI's management estimates that none of the loss recoverables are uncollectible.

The responses for all parts of this question are to be provided in the Excel spreadsheet.

[modify to add in required information for revised calculations]

(a) (*3 points*) Calculate JCI's total Schedule F provision for reinsurance for the 2019 Annual Statement.

(b) (*1 point*) Calculate JCI's NAIC RBC reinsurance credit risk charge for 2019.

GIFREU, Fall 2020, Q9

The case study for this question is at
https://www.soa.org/globalassets/assets/files/edu/2020/fall/intro-study-notes/fall-2020-exam-gifreu-case-study.pdf

(*7 points*) Calculate the following amounts for R-Dan, on a total all lines combined basis, using the information provided in the Case Study's *Excerpts from the Annual Statement*.

(i) (*1.5 points*) Unearned premium reserve (UPR) as of year-end 2017, gross of ceded reinsurance (i.e., direct plus assumed).

(ii) (*1 point*) Unpaid losses and loss adjustment expenses (L&LAE) as of year-end 2018, gross of ceded reinsurance.

(iii) (*2 points*) Adjusting and Other loss adjustment expense (A&O) payments during calendar year 2018, net of ceded reinsurance.

(iv) (*1.5 points*) A&O incurred during calendar year 2018, net of ceded reinsurance.

(v) (*1 point*) Loss payments during calendar year 2017, net of ceded reinsurance.

The response for this question is to be provided in the Excel spreadsheet.

GIFREU, Fall 2020, Q10

The case study for this question is at https://www.soa.org/globalassets/assets/files/edu/2020/fall/intro-study-notes/fall-2020-exam-gifreu-case-study.pdf

(*6 points*) You are given the following information for R-Dan's NAIC RBC calculation as of December 31, 2018:

Risk Charge category	**Calculated Risk Charge (in thousands)**
R_0 charge	60
R_2 charge	5,280
R_4 charge (before conditional adjustment)	34,650
R_5 charge	53,110
R_{CAT} charge	20,100

Bond Categories	**Calculated Risk Charge (in thousands)**
Federal government issued bonds	0
Class 1 bonds, issued by a U.S. government agency (USGA)	40
Class 1 bonds, not issued by a USGA	500
Class 2 bonds	1,040
Class 3 bonds	730
Class 4 bonds	1,100
Class 5 bonds	1,220
Class 6 bonds	1,830

- The *asset concentration charge* for fixed-income securities is calculated as 650,000.

Calculate the following for R-Dan's 2018 NAIC RBC:

(i) R_1

(ii) R_3 after conditional adjustment [modify to add in required information for revised calculations-OK]

(iii) RBC Ratio

The response for this question is to be provided in the Excel spreadsheet.

GIFREU, Fall 2020, Q11

The case study for this question is at
https://www.soa.org/globalassets/assets/files/edu/2020/fall/intro-study-notes/fall-2020-exam-gifreu-case-study.pdf

(*5 points*) Based upon a preliminary review of data, the A.M. Best rating agency has informed R-Dan that it is considering a significant downgrade to R-Dan's financial rating pending a more thorough review of information from R-Dan during the interactive meeting.

(a) (*1 point*) Provide two reasons why R-Dan should continue with the interactive meeting for a financial rating despite the potential for a financial rating downgrade.

ANSWER:

R-Dan management proceeds with the interactive meeting and provides the rating agency with all the information included in the Case Study and the complete Actuarial Report for year-end 2018. R-Dan management informs the rating agency that the projected financials (Section 6 of the Case Study) assume a constant 17% underwriting expense ratio, which is consistent with the current level of expenses experienced by R-Dan.

The rating agency notes that the Actuarial Report adequately supports Sue Calvin's point estimate for unpaid losses and loss adjustment expenses.

(b) (*3.5 points*) Explain how the information provided by R-Dan management could lead to a financial rating downgrade giving consideration to:

(i) Projected financials

(ii) Documents related to the Actuarial Opinion

ANSWER:

(c) (*0.5 points*) Describe how a financial rating downgrade could affect R-Dan's business.

ANSWER:

GIFREU, Fall 2020, Q16

(*5 points*) In the U.S., federal tax-basis loss reserves are determined using:

- Loss reserves derived from Schedule P
- Discount rates promulgated by the U.S. Treasury, and
- Loss payment patterns by line of business derived from Schedule P.

(a) (*1 point*) Explain why it is appropriate that the tax code uses Schedule P Part 1 information instead of the loss triangles in Schedule P Parts 2 and 3 for the derivation of loss payment patterns.

ANSWER:

In 2017, U.S. tax law reforms were enacted that affected the calculation of tax-basis loss reserves for general insurance companies

(b) (*0.5 points*) Identify the source of the discount rate used to calculate tax-basis loss reserves:

(i) Before the tax reform of 2017

(ii) After the tax reform of 2017

ANSWER:

(c) (*1 point*) Explain how the change in part (b) has affected tax liabilities for insurers.

ANSWER:

(d) (*1 point*) Describe two changes to the procedure for selecting loss payment patterns for tax-basis loss reserves that were introduced in the tax reform of 2017.

ANSWER:

(e) (*1.5 points*) Explain how anticipated salvage and subrogation (S&S) is handled in the calculation of tax-basis loss reserves.

ANSWER:

GIFREU, Fall 2020, Q18

(*6 points*) The Preamble to the NAIC Accounting Practices and Procedures Manual defines permitted accounting practices and prescribed accounting practices with respect to U.S. statutory accounting.

(a) (*1.5 points*) Describe what is meant by each of the following:

(i) permitted accounting practice

(ii) prescribed accounting practice

ANSWER:

The principles of U.S. GAAP and U.S. statutory accounting differ in many ways.

(b) (*2 points*) Identify the difference between U.S. GAAP and U.S. statutory accounting with respect to each of the following:

(i) Intended audience

(ii) Emphasis of accounting principles

(iii) Financial exhibit that is emphasized

(iv) Regulatory body

ANSWER:

(c) (*1 point*) Describe an accounting transaction with different treatment under U.S. GAAP vs. U.S. statutory accounting.

ANSWER:

Under U.S. statutory accounting, general insurance companies discount tabular indemnity loss reserves for worker's compensation in accordance with Statement of Statutory Accounting Principles No. 65 (SSAP 65), *Property and Casualty Contracts*.

SSAP No. 65 specifies four items that need to be disclosed for this type of discounting.

(d) (*1.5 points*) Identify these four disclosure items.

ANSWER:

GIFREU, Fall 2020, Q19

(*4 points*) The NAIC uses both Financial Analysis Solvency Tools (FAST) scores and IRIS ratios for measuring the financial condition of insurers.

(a) (*2.5 points*) Describe how FAST scores and IRIS ratios differ with respect to each of the following:

(i) Interpretation of result from an individual score/ratio

(ii) Publication of results

(iii) Weighting of results

ANSWER:

(b) (*1.5 points*) Identify three FAST scores with no corresponding IRIS ratio.

ANSWER:

GIFREU, Spring 2021, Q4

(*5 points*) You are given the following catastrophe loss modeling results for a general insurer domiciled in the U.S.:

Basis	Return Period (1/x years)	Catastrophe Loss ($000)					
		Earthquake		Hurricane		Terrorism	
		Internal Model	EQECAT Model	Internal Model	RMS Model	Internal Model	AIR Model
Gross of Reinsurance	**1/100**	158	175	105	700	15	25
	1/200	214	238	143	950	38	45
	1/500	270	300	180	1,200	55	100
Net of Reinsurance	**1/100**	17	19	11	75	5	6
	1/200	28	30	19	125	10	12
	1/500	54	60	36	240	15	38

- EQECAT, RMS and AIR are commercially available catastrophe models.
- The insurer's internal catastrophe models have not been reviewed by its domiciliary insurance regulator.

(a) (*2 points*) Calculate the NAIC RBC catastrophe risk for this general insurer.

Provide the response for this part in the Excel spreadsheet.

The NAIC RBC filing for a company must include explanations for a number of assumptions relating to their modeling of catastrophe losses.

(b) (*0.5 points*) Identify two assumptions requiring mandatory explanations.

ANSWER:

(c) (*1 point*) Explain how double counting of catastrophe risk is avoided in the overall NAIC RBC formula.

ANSWER:

The standard formula for the Solvency Capital Requirement (SCR) under Solvency II also includes a charge for catastrophe risks.

(d) (*1.5 points*) Compare the catastrophe risk charge included in the Solvency II SCR to that in the NAIC RBC formula with respect to each of the following:

(i) Return period used for catastrophe loss modeling

(ii) Natural catastrophe risks included in the formula [SCR from GI 201]

(iii) Man-made catastrophe risks included in the formula

(iv) Correlations between catastrophe risks included in the formula [SCR from GI 201]

ANSWER:

GIFREU, Spring 2021, Q9

The case study for this question is at
https://www.soa.org/globalassets/assets/files/edu/2021/spring/case-study/gifreu.pdf

(*6 points*) You are reviewing the calculation of the Net Written Premium (NWP) risk charge included in R-Dan's NAIC RBC requirement for 2018.

You are given the NAIC RBC Basic NWP charge (in $000), by line of business, for inclusion in R-Dan's 2018 NAIC RBC calculation as follows:

Homeowners / Farmowners (H/F)	Private Passenger Auto Liability/ Medical (PPA)	Commercial Auto Liability (CAL)	Auto Physical Damage (APD)	Special Property (SP)
24,883	32,212	23	0	74

(a) (*3 points*) Demonstrate that the NAIC RBC Basic NWP charge for PPA was correctly calculated.

Provide the response for this part in the Excel spreadsheet.

(b) (*1.5 points*) Calculate R-Dan's NAIC RBC NWP risk charge before the addition of the excess growth charge.

Provide the response for this part in the Excel spreadsheet.

You are given the following 3-year written premium growth rates for R-Dan:
[NEED TO CORRECT AS PER ERRATA]

	H/F	PPA	CAL	APD	SP
Gross	24.8%	4.8%	10.1%	6.5%	0.0%
Net	23.8%	4.2%	10.0%	6.1%	0.0%

(c) (*1.5 points*) Calculate R-Dan's NAIC RBC NWP risk charge, R_5.

Provide the response for this part in the Excel spreadsheet.

GIFREU, Spring 2021, Q10

The case study for this question is at https://www.soa.org/globalassets/assets/files/edu/2021/spring/case-study/gifreu.pdf

(*5 points*) R-Dan management contends that it had strengthened its case reserves in 2017 and 2018 with a focus on claims occurring on or after January 1, 2013 for the Private Passenger Auto Liability/Medical (PPA) line of business:

Assume a claims severity trend of 0% for PPA, which is consistent with that for the industry.

(a) (*2.5 points*) Develop a table of data to assess R-Dan management's contention that it strengthened case reserves for PPA.

Provide the response for this part in the Excel spreadsheet.

(b) (*2.5 points*) Assess R-Dan's contention that it strengthened case reserves for PPA.

ANSWER:

GIFREU, Spring 2021, Q11

The case study for this question is at
https://www.soa.org/globalassets/assets/files/edu/2021/spring/case-study/gifreu.pdf

NOTE: This item also applies to Learning Objective 4.

(*7 points*) Some members of R-Dan's management team were concerned that the company has been booking the low end of Sue Calvin's range for net reserves over the past few years. They believed that R-Dan should be booking net reserves that are closer to Sue Calvin's estimated net reserves of $318 million at year-end 2018.

(a) (*0.5 points*) Provide an argument supporting booked net reserves of $289.5 million for R-Dan's 2018 Annual Statement.

ANSWER:

Sue Calvin's estimated net reserves were as follows:

	12/31/2018 Net Reserves by Accident Year ($ millions)					
Total	**2018**	**2017**	**2016**	**2015**	**2014**	**Prior**
318	188	67	33	16	7	7

R-Dan's 2018 NAIC IRIS reserve ratios were as follows:

Ratio 11 **1-year development**	**Ratio 12** **2-year development**	**Ratio 13** **Estimated Current Reserve Deficiency**
17.3%	19.7%	16.0%

R-Dan management wants to test the sensitivity of these results under an alternative selection of booked reserves for 2018 financial reporting.

(b) (*4 points*) Recalculate R-Dan's 2018 NAIC IRIS Ratios 11, 12 and 13 using Sue Calvin's point estimate for year-end 2018 only.

Provide the response for this part in the Excel spreadsheet.

(c) (*1.5 points*) Assess the implications on R-Dan's IRIS ratios of using Sue Calvin's point estimate.

ANSWER:

(d) (*1 point*) Assess the broader implications of using Sue Calvin's point estimate.

ANSWER:

GIFREU, Spring 2021, Q12

The case study for this question is at
https://www.soa.org/globalassets/assets/files/edu/2021/spring/case-study/gifreu.pdf

(*5 points*) You are given the following information for R-Dan's homeowners (HO) line of business that was used in the completion of the 2018 Insurance Expense Exhibit (IEE):

Annual Statement Item (amounts in millions)	**2017**	**2018**
Net unpaid losses	24.9	29.3
Net unpaid loss adjustment expenses for Defense and Cost Containment (DCC)	1.4	1.6
Net unpaid loss adjustment expenses for Adjusting and Other (AO)	4.7	5.2
Net unearned premium reserve	81.8	98.7
Net premiums written	149.6	184.1
Net premiums earned	131.9	167.2
Agents' balances	14.7	16.7

You have been informed that R-Dan's policyholders' surplus (PHS) for 2018 was overstated in its statutory Annual Statement by $20 million. This overstatement was due to amounts owed to others that were not recorded but should have been recorded in *aggregate write-in for liabilities*.

Determine the following items for R-Dan's 2018 IEE using the corrected amount for the 2018 PHS:

(i) (*1 point*) Prepaid expense ratio for HO

(ii) (*2 points*) Investment gain ratio

(iii) (*2 points*) Investment gain on funds attributable to insurance transactions for HO

Provide the response in the Excel spreadsheet.

GIFREU, Spring 2021, Q15

(*3 points*) U.S. statutory accounting distinguishes secured from unsecured receivables.

(a) (*0.5 points*) State two approaches for securing premium receivables.

ANSWER:

(b) (*0.5 points*) Identify the section of the NAIC annual statement where each approach for securing premium receivables from part (a) is reported.

ANSWER:

(c) (*0.5 points*) Describe the statutory treatment of secured premium receivables.

ANSWER:

(d) (*0.5 points*) Describe the statutory treatment of unsecured premium receivables not yet due.

ANSWER:

(e) (*1 point*) Explain why earned but unbilled (EBUB) premium and accrued retrospective premium (ARP) arise in commercial general insurance.

ANSWER:

GIFREU, Spring 2021, Q18

(*5 points*) Casualty insurers may purchase an annuity from a life insurer to fund structured settlement payments to claimants. Structured settlements funded by an annuity function similarly to an insurer retroactively reinsuring its unpaid claims.

(a) (*1.5 points*) Contrast the reporting of reserves under U.S. statutory accounting for the two claims below, including a key reason for the difference.

(i) a claim that includes a structured settlement funded by an annuity

(ii) a claim that includes retroactive reinsurance

ANSWER:

GCIC, a U.S. general insurer, has $50 million in statutory surplus as of Dec. 31, 2020. GCIC has arranged structured settlements for several of its liability insurance claims by purchasing annuities. You are tasked with constructing GCIC's required disclosures for Note 27 in the Notes to Financial Statements of its statutory Annual Statement as of Dec. 31, 2020. The following table outlines key information with respect to GCIC's annuity-funded structured settlements:

Annuity	**Statutory Value of Annuity at Purchase Date ($000)**	**Statutory Value of Annuity at Dec. 31, 2020 ($000)**	**Annuity Payer (life insurance company)**	**Annuity Payer Financial Rating**	**Annuity Payee**
A	850	750	UPL	A+	Claimant
B	650	600	GRL	A−	GCIC
C	350	300	GRL	A−	Claimant
D	400	400	BLL	A	GCIC
E	500	450	BLL	A	Claimant
F	700	550	CTL	B	GCIC
G	300	250	CTL	B	Claimant
H	800	700	DEL	B+	Claimant
I	150	150	DEL	B+	GCIC

- GCIC obtains a release of liability from the claimant whenever the annuity payer is financially rated A or higher and the annuity payee is the claimant.
- GRL is an affiliate of GCIC.
- GRL and DEL are licensed in GCIC's state of domicile.
- BLL, CTL, and UPL are not licensed in GCIC's state of domicile.

(b) (*1.5 points*) Calculate the two amounts that GCIC must report in Note 27 Part A.

Provide the response for this part in the Excel spreadsheet.

(c) (*2 points*) Construct GCIC's required disclosures for Note 27 (Parts A and B).

Provide the response for this part in the Excel spreadsheet.

GIFREU, Fall 2021, Q4

(*5 points*) NGI, a U.S. general insurer, has excess of loss reinsurance from reinsurer F-Re for claims occurring in 2020. The reinsurance is $900,000 excess $100,000 per occurrence with no aggregate limit.

You are given the following claims information for NGI as of year-end 2020 for claims that are subject to reinsurance from F-Re:

Claim #	Accident Date (m/d/y)	NGI Direct Claim Amount ($)	Date of NGI Payment to Claimant (m/d/y)	Date of F-Re Payment to NGI (m/d/y)
	(1)	(2)	(3)	(4)
C01	1/1/2020	175,000	4/25/2020	4/30/2020
C02	2/1/2020	550,000	4/15/2020	5/20/2020
C03	3/22/2020	775,000	3/22/2020	unpaid
C04	4/15/2020	130,000	4/20/2020	8/15/2020
C05	6/11/2020	325,000	7/25/2020	9/15/2020
C06	7/27/2020	1,075,000	8/20/2020	unpaid
C07	8/22/2020	395,000	9/15/2020	12/29/2020
C08	9/11/2020	300,000	9/28/2020	unpaid
C09	10/24/2020	215,000	unpaid	unpaid
C10	11/25/2020	445,000	unpaid	unpaid
C11	12/15/2020	175,000	12/20/2020	unpaid

There are no reinsurance recoverables from F-Re with respect to unearned premiums and commissions.

Calculate NGI's 2020 Schedule F provision for reinsurance from F-Re under each of the following scenarios:

Scenario	F-Re Status	Securing funds from F-Re ($)	Claims disputed by F-Re
(i)	Authorized	0	None
(ii)	Authorized	0	C03
(iii)	Authorized	400,000	C03
(iv)	Unauthorized	400,000	C03

Provide the response for this question in the Excel spreadsheet.

GIFREU, Fall 2021, Q6

(*4 points*)

(a) (*1 point*) Explain two of the ways that ORSA expands the risk-based capital formula approach to solvency monitoring.

ANSWER:

(b) (*1.5 points*) Describe the three sections of the NAIC ORSA summary report.

ANSWER:

~~The Canadian Dynamic Capital Adequacy Testing (DCAT) report (*recently renamed as Financial Condition Testing (FCT)*) provides information on some of the areas covered in an ORSA report.~~

~~(c) (*0.5 points*) Identify which section(s) of the NAIC ORSA summary report are covered in a Canadian DCAT report.~~

~~ANSWER:~~

~~(d) (*1 point*) Explain why the ORSA and DCAT Report remain separate regulatory requirements in Canada.~~

~~ANSWER:~~

GIFREU, Fall 2021, Q9

The case study for this question is at https://www.soa.org/4a203c/globalassets/assets/files/edu/2021/fall/case-study/gifreu-case-study.pdf

(*4 points*) You are given the following simplified assumptions applying to tax year 2020 Private Passenger Auto Liability/Medical (PPA):

IRS tax basis loss and LAE reserve discount factors		
	Unpaid	**Salvage and Subrogation**
Accident years 2019 and prior	0.965	0.970
Accident year 2020	0.960	0.975

(a) (*1.5 points*) Calculate R-Dan's 2020 tax basis loss and LAE reserves for PPA.

Provide the response for this part in the Excel spreadsheet.

R-Dan's tax basis loss and LAE reserves for all lines of business combined are:

- \$306.9 million for year-end 2020, and
- \$261.0 million for year-end 2019.

(b) (*2.5 points*) Calculate R-Dan's 2020 tax basis underwriting income.

Provide the response for this part in the Excel spreadsheet.

GIFREU, Fall 2021, Q10

The case study for this question is at
https://www.soa.org/4a203c/globalassets/assets/files/edu/2021/fall/case-study/gifreu-case-study.pdf

(*7 points*)

(a) (*2 points*) Describe the purpose for each of the following NAIC IRIS Ratios:

(i) IRIS Ratio 4 – Surplus Aid to Surplus

(ii) IRIS Ratio 8 – Change in Adjusted Policyholders' Surplus

(iii) IRIS Ratio 9 – Adjusted Liabilities to Liquid Assets

ANSWER:

(b) (*3.5 points*) Calculate the NAIC IRIS Ratios noted in part (a) for R-Dan as of December 31, 2020:

Provide the response for this part in the Excel spreadsheet.

(c) (*1.5 points*) Determine whether or not each of the IRIS Ratio results for R-Dan calculated in part (b) represents an exceptional value. Include the criteria used for making each determination.

Provide the response for this part in the Excel spreadsheet.

GIFREU, Fall 2021, Q11

The case study for this question is at
https://www.soa.org/4a203c/globalassets/assets/files/edu/2021/fall/case-study/gifreu-case-study.pdf

(*5 points*) An audit of R-Dan's financial statement for year-end 2020 indicated that the financial statements should include a premium deficiency reserve (PDR). R-Dan management does not agree with the auditor's conclusion. R-Dan management provided the following analysis to support the position that a PDR was not required.

	Items for 2020	**Amount (in thousands)**	**Source**
(1)	Accident year losses and loss adjustment expenses	520,500	Schedule P Part 1 – Summary, column 28 row 11
(2)	Maintenance expenses	33,600	Insurance Expense Exhibit Part I, column 3 row 25
(3)	Cost of policies	554,100	(1) + (2)
(4)	Earned premiums	578,500	Statement of Income, column 1 row 1
(5)	Policy costs to premium ratio	95.8%	(3) / (4)
(6)	Unearned premium reserve	208,800	Underwriting and Investment Exhibit Part 1, column 3 row 35
(7)	Indicated PDR	0	(6) × Maximum of [((5) – 100%) and 0%]

R-Dan management's assumptions for the calculation are:

I. Acquisition costs do not need to be included because they have already been expensed.
II. It is appropriate to estimate maintenance expenses using general expenses from the Insurance Expense Exhibit.
III. It is appropriate to ignore anticipated investment income on the funds as it is not material for this book of business in the current low interest rate environment.

R-Dan's auditors agree with the three assumptions in R-Dan management's PDR calculation. However, R-Dan's auditors note that the PDR calculation provided does not follow all of the principles of U.S. statutory accounting.

(a) (*1.5 points*) Critique R-Dan management's PDR calculation.

ANSWER:

(b) (*2 points*) Calculate a year-end 2020 PDR for R-Dan following the principles of U.S. statutory accounting and R-Dan management's three stated assumptions.

Provide the response for this part in the Excel spreadsheet.

(c) (*1.5 points*) Provide a rationale for the inputs used in your calculation of the PDR in part (b).

Provide the response for this part in the Excel spreadsheet.

GIFREU, Fall 2021, Q16

(*6 points*) U.S. statutory accounting classifies some assets, or portions of some assets, as nonadmitted.

(a) (*1 point*) Describe two ways in which investment assets can be nonadmitted under the rules of U.S. statutory accounting.

ANSWER:

(b) (*1.5 points*) Describe the accounting treatment under U.S. statutory accounting, including valuation basis and admitted/nonadmitted status, for the following assets:

(i) Material assets, not held as investments

(ii) Goodwill from a statutory purchase

(iii) Electronic data processing equipment and software

ANSWER: (i) (ii) (iii)

(c) (*0.5 points*) Explain how it is possible for an increase in nonadmitted assets to reduce surplus.

ANSWER:

You are given the following information for a U.S. general insurer:

Item	**Amount (000) as of Dec. 31, 2020**
Statutory policyholders' surplus	1,105
Statutory loss and LAE reserves	1,830
Estimated deficiency in statutory loss and LAE reserves	125

Cost of holding capital for loss and LAE reserves	175
Unearned premium reserves	893
Equity in the unearned premium reserves	150
Nonadmitted assets	136
Schedule F provision for reinsurance	278
Management's estimate for uncollectible reinsurance	100
Management's estimate for bad debts from agents' balances	35

- Statutory loss and LAE reserves are not discounted.
- Implicit interest discount in statutory loss and LAE reserves is estimated to be 8% of the reserve amount.
- The opportunity cost of capital is 10%.

(d) (*3 points*) Estimate the target return on statutory surplus for this insurer.

Provide the response for this part in the Excel spreadsheet.

GIFREU, Fall 2021, Q20

(*4 points*) Statements of Statutory Accounting Principles (SSAP) No. 5, *Liabilities, Contingencies and Impairments of Assets*, outlines two conditions that must both be met for an estimated loss from a loss contingency to be recorded as a charge to operations.

(a) (*1 point*) State these two SSAP No. 5 conditions.

ANSWER:

(b) (*0.5 points*) Describe what is required of an insurer if a loss contingency is not recorded because only one of the SSAP No. 5 conditions is met.

ANSWER:

SSAP No. 63, *Underwriting Pools and Associations Including Intercompany Pools*, describes the accounting procedures for intercompany pooling arrangements.

You are given the following details for an intercompany pooling arrangement:

- There are four insurance companies, A, B, C and D each writing general insurance policies.
- Companies A, B and C cede 100% of their business to company D.
- Company D cedes 15% to each of companies A, B, and C, while company D retains the remainder of the pooled business.

(c) (*1.5 points*) Determine the amount each of the insurers is liable for on a $10,000 claim from a policy issued by A, under each of the following categories as per SSAP No. 63:

(i) Directly liable to the claimant

(ii) Liable as reinsurer

ANSWER:

SSAP No. 65, *Property and Casualty Contracts*, describes the accounting procedures for claims-made policies and any extended reporting endorsements. In some instances, the extended reporting endorsement is provided at no additional charge in the event of death, disability, or retirement of a natural person insured.

(d) (*1 point*) Outline how an insurer should account for this extended reporting coverage as per SSAP No. 65.

ANSWER:

GIFREU, Spring 2022, Q1

(*5 points*) Most NAIC IRIS ratios create exceptional values only when the ratio is above a certain value. However, four of the thirteen NAIC IRIS ratios create exceptional values when the ratio is outside a specified range of values.

(a) (*0.5 points*) Identify two of these four NAIC IRIS ratios. The two ratios identified should not have resultant values that overlap significantly.

ANSWER:

(b) (*2 points*) Explain why values that are too high or too low may be signs of financial distress for each of the two NAIC IRIS ratios identified in (a).

ANSWER:

NAIC IRIS Ratio 4 (Surplus Aid to Policyholders' Surplus) produces exceptional values only when greater than 15%.

(c) (*2.5 points*) Provide the following regarding IRIS Ratio 4:

(i) The formula for calculating surplus aid

(ii) A reason that an exceptionally high value may be a sign of financial distress

(iii) The effect that an exceptionally high value has on other IRIS ratios

(iv) The additional IRIS calculations that would likely need to be done when this ratio produces an exceptional value

ANSWER: (i) (ii) (iii) (iv)

GIFREU, Spring 2022, Q2

(*4 points*)

(a) (*1 point*) State two reasons why U.S. statutory accounting requires certain assets to be designated as nonadmitted.

ANSWER:

A U.S. general insurer/reinsurer is completing its statutory annual statement. It has $7.35 million in policyholders' surplus.

(b) (*3 points*) Determine the admitted amount that should be booked by this company for each of the following assets. Include the reasoning supporting each determination.

(i) Ten automobiles (for use by claims adjusters) purchased five years ago for a total of $300,000 with a total current market value of $80,000 and total current depreciated value of $150,000.

(ii) Assumed premium balances from insurers, 70 days past due, in the amount of $100,000.

(iii) Unsecured accrued retrospective premiums in the amount of $500,000.

(iv) Reinsurance recoverables, from a slow-paying authorized reinsurer, in the amount of $200,000. Management's best estimate is that $10,000 of this amount is uncollectible.

(v) Goodwill from the purchase of an entity. The purchase price was $3 million and the acquired entity's surplus was $2.2 million.

(vi) Operating system software, with a useful life of four years, purchased for $360,000 two years ago.

ANSWER:
(i)
(ii)
(iii)
(iv)
(v)
(vi)

GIFREU, Spring 2022, Q6

(*4 points*) You are working on the U.S. federal tax calculations for a U.S. general insurer and are given the following information:

Investment Income Amounts (in $ millions)	**2021**
Taxable interest income	5.65
Interest income from tax-exempt municipal bonds	6.50
Dividends received	1.96
Realized capital gains	2.50

The company has no affiliates.

(a) (*1 point*) Demonstrate that the company's taxable investment income for 2021 is $11 million.

Provide the response for this part in the Excel spreadsheet.

You are given the following additional information for the company:

Amounts (in $ millions)	**2021**	**2020**
Net unearned premium reserve as at year-end	35	25
Undiscounted net loss and LAE reserves as at year-end	91	75
Tax-basis discounted net loss and LAE reserves as at year-end	77	67
Net written premium	60	40
Net loss and LAE paid	36	28
Tax-deductible other expenses	21	13
Taxable investment income	11	8

(b) (*3 points*) Calculate the company's 2021 taxable income using each of the following methods:

(i) Indirect method

(ii) Direct method

Provide the response for this part in the Excel spreadsheet.

GIFREU, Spring 2022, Q9

The case study for this question is at
https://www.soa.org/490494/globalassets/assets/files/edu/2022/spring/2022-gifreu-spring-case-study.pdf
(*5 points*) The NAIC Annual Statement contents includes *Notes to Financial Statements*. Within these notes is *Note 25: Changes in Incurred Losses and Loss Adjustment Expenses*.

R-Dan's Note 25 begins with the following text:

"Incurred losses and loss adjustment expenses represent the sum of paid losses, loss adjustment expenses and reserve changes. Reserves are estimates of the unpaid amounts for losses that have already occurred. This includes amounts for incurred but not reported losses. Establishing appropriate reserves is an inherently uncertain process. As such, the ultimate amount of losses may be significantly different from the recorded amounts that are based upon best estimates from R-Dan management."

(a) (*0.5 points*) Describe the purpose of Note 25.

ANSWER:

(b) (*4.5 points*) Complete R-Dan's Note 25 for the 2021 Annual Statement, including both required numbers and narrative, using the information provided in the case study.

The response for this part may be provided in this Word document or the Excel spreadsheet.

ANSWER:

GIFREU, Spring 2022, Q10

The case study for this question is at
https://www.soa.org/490494/globalassets/assets/files/edu/2022/spring/2022-gifreu-spring-case-study.pdf

(*7 points*)

(a) (*2.5 points*) Calculate R-Dan's 2021 NAIC Risk-Based Capital (RBC) *base loss and LAE reserve risk charge* for Homeowners/Farmowners (H/F).

Provide the response for this part in the Excel spreadsheet.

R-Dan's 2021 RBC *base loss and LAE reserve risk charge* by line of business, excluding H/F, is as follows:

Item	Amount (000)
Private Passenger Liab./Med. (PPL)	28,180
Commercial Auto/Truck Liab./Med. (CAL)	50
Auto Physical Damage (APD)	340
Special Property (SP)	0

(b) (*2 points*) Calculate R-Dan's NAIC RBC *underwriting risk charge for reserve risk before conditional adjustment*.

Provide the response for this part in the Excel spreadsheet.

The components of R-Dan's 2021 NAIC RBC *credit risk charge before conditional adjustment* are as follows:

Item	Amount (000)
Investment income due and accrued	90
Federal tax recoverables	470
Recoverable from affiliates	100
Reinsurance recoverables	3,100

(c) (*1 point*) Calculate R-Dan's 2021 NAIC RBC charge R_3 (*credit risk charge after conditional adjustment*).

Provide the response for this part in the Excel spreadsheet.

(d) (*0.5 points*) Explain why the RBC calculation includes the conditional adjustment.

Provide the response for this part in the Excel spreadsheet.

You are given the following additional information regarding R-Dan's 2021 NAIC RBC calculation:

Item	**Amount (000)**
R_0 RBC Charge	60
R_1 RBC Charge	8,820
R_2 RBC Charge	5,280
R_4 RBC Charge (*after conditional adjustment*)	33,860
R_5 RBC Charge	47,000
R_{CAT} RBC Charge	21,860

(e) (*1 point*) Calculate R-Dan's 2021 NAIC RBC Ratio.

Provide the response for this part in the Excel spreadsheet.

GIFREU, Spring 2022, Q11

The case study for this question is at
https://www.soa.org/490494/globalassets/assets/files/edu/2022/spring/2022-gifreu-spring-case-study.pdf

(*6 points*) R-Dan is undergoing a review by a financial rating agency. The agency focused on R-Dan's business strategy and growth by looking at the company's historical results and projections. R-Dan management readily admits that it has begun sacrificing profitability for growth and that this will continue at least until 2023 at which point it will then address profitability. The rating agency has access to the following documents:

- The company's business strategy (*refer to pages 3 to 6 of the Case Study*)
- Statutory financial statements
- Company projections
- Statement of Actuarial Opinion (SAO)
- Actuarial Opinion Summary (AOS)
- Actuarial Report

(a) (*2 points*) Explain what concerns the rating agency may have regarding R-Dan's year-end 2021 reserves.

ANSWER:

(b) (*2 points*) Explain what concerns the rating agency may have regarding R-Dan's projected underwriting results.

ANSWER:

An analysis by the rating agency projects a likely net underwriting loss of 80,000,000 for 2022 instead of the 30,000,000 net underwriting loss as projected by R-Dan. This would result in a net loss after taxes in 2022 of about 30,000,000 instead of the net income after taxes of 10,000,000 as shown in R-Dan's projections.

(c) (*2 points*) Explain the likely implications for R-Dan if the rating agency's projection for 2022 is accurate.

ANSWER:

GIFREU, Spring 2022, Q12

The case study for this question is at https://www.soa.org/490494/globalassets/assets/files/edu/2022/spring/2022-gifreu-spring-case-study.pdf

(*6 points*) You are given the following information for R-Dan's private passenger auto liability (PPAL) line of business:

PPAL (amounts in millions)	**Current Year (2021)**	**Prior Year (2020)**
Net unpaid losses	207.0	176.2
Net unpaid loss adjustment expenses for Defense and Cost Containment (DCC)	33.9	30.6
Net unpaid loss adjustment expenses for Adjusting and Other (AO)	7.9	7.1
Agents' balances	22.0	19.3

You have been informed that while the total amount in the current year for *Taxes, Licenses & Fees* was correct at $14.4 million as shown in the 2021 Insurance Expense Exhibit (IEE), the amount for PPAL was understated by $1 million and the amount for private passenger auto physical damage was overstated by $1 million.

Determine the following items for R-Dan's 2021 corrected IEE using the restated amount for the current year's *Taxes, Licenses & Fees*:

(iv) (*1 point*) Prepaid expense ratio for PPAL

(v) (*2 points*) Investment gain ratio

(vi) (*3 points*) Investment gain on funds attributable to capital and surplus for PPAL

Provide the response in the Excel spreadsheet.

GIFREU, Spring 2022, Q16

(*5 points*)

(a) (*1 point*) Explain why intercompany pooling agreements do not typically represent agreements of true risk transfer.

ANSWER:

(b) (*2.5 points*) Determine how an intercompany pooling agreement will affect the following components of a U.S. statutory Annual Statement (AS) exhibit for a pool participant.

(i) Income Statement (i.e., AS page 4) components:
- Underwriting income
- Investment income
- Capital and surplus account

(ii) Assets (i.e., AS page 2) component:
- Cash and invested assets

(iii) Liabilities, Surplus and Other Funds (i.e., AS page 3) components:
- Losses and loss and adjustment expenses
- Surplus as regards policyholders

ANSWER: (i) (ii) (iii)

Under a scenario of changing percentages of intercompany pooling participation from year to year, the historical figures in the current year's Schedule P may not agree with the corresponding Schedule P entries from the AS of previous years.

(c) (*1 point*) Explain how Schedule P should be constructed under this scenario.

ANSWER:

(d) (*0.5 points*) Explain how intercompany reinsurance transactions that are not pooling agreements are treated in Schedule P.

ANSWER:

GIFREU, Spring 2022, Q18

(*5 points*) The following calendar year 2021 statutory accounting information is provided for a U.S. general insurer. Amounts in the table are in millions of dollars and are before tax.

Net underwriting gain	16.0
Net investment income earned	55.0
Realized capital gains	22.0
Change in unrealized capital gains	10.0
Schedule F provision increase	6.5
Net gain (loss) from agents' balances charged off	(3.2)
Finance and service charges not included in premiums	1.5
Change in intangible assets	2.0
Change in deferred tax assets (DTAs) from revenue offset	0.8
Change in DTAs from IRS loss reserve discounting	2.4

On Dec. 31, 2021, the following company transactions occur that are not reflected in the table above:

- Issuance of two million shares of common stock with a par value of \$1.50 per share and a sale price of \$2 per share.
- Payment of \$0.25 million in policyholder dividends.
- Payment of \$1.75 million in stockholder dividends.

Assume a flat corporate income tax rate of 21%.

Calculate the following Statement of Income amounts for the company's 2021 statutory Annual Statement.

(i) (*0.5 points*) Net investment gain (Line 11)

(ii) (*0.5 points*) Total other income (Line 15)

(iii) (*1 point*) Net income (Line 20)

(iv) (*0.5 points*) Capital changes: Paid in (Line 32.1)

(v) (*0.5 points*) Surplus adjustments: Paid in (Line 33.1)

(vi) (*2 points*) Change in surplus as regards policyholders (Line 38)

Provide the response for this question in the Excel spreadsheet.

GIFREU, Fall 2022, Q1

Compare *deposit accounting* to *reinsurance accounting*, with respect to how it affects the following items:

(i) (*1 point*) *Liabilities* in the statutory Annual Statement

ANSWER:

(ii) (*1 point*) *Assets* in the statutory Annual Statement

ANSWER:

(iii) (*1 point*) *Surplus as regards policyholders* in the statutory Annual Statement

ANSWER:

(iv) (*2 points*) NAIC Risk-Based Capital requirement (R_3, R_4 and Total)

ANSWER:

GIFREU, Fall 2022, Q2

(*7 points*) The NAIC RBC formula includes a credit risk charge for reinsurance recoverables. This charge is based on a table of factors varying with two attributes of the recoverables (reinsurer financial rating and collateralization). Total reinsurance recoverables reported in the Annual Statement are reduced before application of these factors for the calculation of this risk charge.

(a) (*1 point*) Identify the following items that reduce the total reinsurance recoverables used in the credit risk charge calculation:

(i) Two amounts that are included in the total reinsurance recoverables

(ii) Two amounts that are not reinsurance recoverables

ANSWER:

The NAIC RBC formula includes an adjustment for excess premium growth.

(b) (*0.5 points*) Identify which RBC risk charges are changed by the adjustment for excess growth.

ANSWER:

The NAIC RBC formula includes an asset concentration factor.

(c) (*1.5 points*) Describe how this factor affects the risk charges in the RBC formula.

ANSWER:

The NAIC RBC formula includes a bond size adjustment factor.

(d) (*1.5 points*) Describe how this factor adjusts the RBC calculation.

ANSWER:

(e) (*1 point*) Describe how the NAIC RBC formula accounts for the risk from investments in directly owned alien insurance subsidiaries.

ANSWER:

(f) (*1 point*) Describe how the NAIC RBC formula accounts for the risk from investments in domestic insurance affiliates not subject to NAIC RBC.

ANSWER:

The NAIC RBC formula includes a catastrophe risk charge that is based upon a one-in-100-years modeled loss event on a net-of-reinsurance basis for each of hurricanes and earthquakes. In addition, the formula reflects the credit risk of the reinsurer.

(g) (*0.5 points*) Describe how the RBC catastrophe risk charge reflects this credit risk.

ANSWER:

GIFREU, Fall 2022, Q5

(*5 points*) You are given the following ceded reinsurance information for U.S. general insurer GHI as of December 31, 2021. Amounts in the tables are taken from GHI's Schedule F exhibits and are in thousands.

Reinsurer	Authorized	Certified	Reinsurance Recoverable on Paid Losses and Paid Loss Adjustment Expenses				
				Overdue			
			Current	1 to 29 Days	30 to 90 Days	91 to 120 Days	Over 120 Days
J Re	YES	NO	900	270	440	560	200
K Re	NO	NO	600	350	450	340	160

Reinsurer	Amounts Received in the Prior 90 Days	Reinsurance Recoverable on		Reinsurance Ceded Unearned Premiums	Funds Held by Company Under Reinsurance Treaties	Collateral from Letters of Credit
		Known Case Loss & LAE Reserves	IBNR Loss & LAE Reserves			
J Re	190	1,000	500	580	400	200
K Re	150	800	300	100	250	210

- Both reinsurers are based in the U.S. and are not affiliated with GHI.
- The *Reinsurance Recoverable on Paid Losses and Paid Loss Adjustment Expenses* shown in the table above includes amounts in dispute. Amounts in dispute are all from J Re and total 330,000. From this amount:
  - 90,000 is current;
  - 15,000 is overdue between 1 and 29 days;
  - 5,000 is overdue between 30 and 90 days;
  - 120,000 is overdue between 91 and 120 days; and
  - 100,000 is overdue more than 120 days.
- GHI's management estimates that 100,000 of reinsurance recoverables is uncollectible from J Re and 0 is uncollectible from K Re

(a) (*4.5 points*) Determine GHI's total Schedule F provision for reinsurance for the 2021 Annual Statement.

Provide the response for this part in the Excel spreadsheet.

(b) (*0.5 points*) Define *authorized reinsurer* as per NAIC Statement of Statutory Accounting Principles No. 62, *Property and Casualty Reinsurance*.

Provide the response for this part in the Excel spreadsheet.

GIFREU, Fall 2022, Q8

(*4 points*)

(a) (*1.5 points*) Provide three reasons as to why rapid premium growth has been identified as a frequent contributor to insurer insolvency.

ANSWER:

Guaranty funds are established to pay claims arising from insolvent insurer policies.

(b) (*0.5 points*) Describe how guaranty funds can increase the amount of risk assumed by insurers.

ANSWER:

There exist two main methods for funding guaranty funds:

- Pre-funding by risk-based premiums charged to all insurers in a market.
- Funding post-insolvency by assessing the remaining solvent insurers.

(c) (*1 point*) Compare the sufficiency of funding under these two methods.

ANSWER:

Under the NAIC Post-Assessment Property and Liability Insurance Guaranty Association Model Act, there are guaranty fund coverage limitations which apply in addition to the policy terms and conditions of the original insurance contracts. One of these limitations is the *large net worth deductible*.

(d) (*0.5 points*) Explain what prompted the NAIC to add this limitation to the Model Act.

ANSWER:

(e) (*0.5 points*) Explain the purpose of including this limitation in the Model Act.

ANSWER:

GIFREU, Fall 2022, Q9

The case study for this question is at
https://www.soa.org/49e974/globalassets/assets/files/edu/2022/fall/case-study/gifreu-case-study.pdf

(*4 points*) Create the following development triangles for R-Dan's private passenger auto liability (PPAL) line of business (net losses and defense and cost containment expenses) for accident years 2018 to 2021:

(i) Average case basis unpaid

(ii) Average payment per closed claim

- Assume that there are no partial payments on claims.

Provide the response for this question in the Excel spreadsheet.

GIFREU, Fall 2022, Q10

The case study for this question is at
https://www.soa.org/49e974/globalassets/assets/files/edu/2022/fall/case-study/gifreu-case-study.pdf

(*9 points*) NAIC IRIS Ratios 11 and 12 measure reserve development to policyholders' surplus. The usual range for these ratios is anything under 20%. Values outside the usual range may indicate deficient reserves.

(a) (*0.5 points*) Explain how values outside the usual range for these reserve ratios could be caused by something beneficial to an insurer's financial health.

ANSWER:

R-Dan's original projections were based upon an optimistic scenario for underwriting results. R-Dan subsequently revised these projections to reflect a more realistic scenario for underwriting results.

The following table shows R-Dan's actual results for 2021 and the revised projections for 2022 to 2024:

REVISED PROJECTIONS	**Actual**	**Projected**	**Projected**	**Projected**
	2021	**2022**	**2023**	**2024**
Gross Premiums Written				
Liability lines	248,200	279,200	293,200	303,500
Property lines	180,600	203,200	213,400	220,900
Property and liability combined lines	189,300	217,700	239,500	263,500
Total	618,100	700,100	746,100	787,900
Net Premiums Written				
Liability lines	243,900	274,400	288,100	298,200
Property lines	179,700	202,200	212,300	219,700
Property and liability combined lines	184,100	211,700	232,900	256,200
Total	607,700	688,300	733,300	774,100
Income				
Net underwriting gain (loss)	(72,500)	(60,000)	(30,000)	(15,000)
Net investment gain (loss)	33,000	28,000	32,000	34,000
Total other income	2,700	3,100	3,300	3,500
Federal and foreign income taxes incurred	(20,300)	(7,500)	(1,500)	2,000

Net income	(16,500)	(21,400)	6,800	20,500
Surplus				
Capital paid-in by parent during year	10,000	10,000	0	0
Surplus as regards policyholders at year-end	209,400	198,000	204,800	225,300

The following amounts were used in the creation of the revised projections:

	2022	**2023**	**2024**
Net unearned premium reserve at year end	236,800	256,100	272,000
Underwriting expenses for the year	111,800	119,200	125,800
Net realized capital gain for the year	600	700	800

(b) (*6.5 points*) Calculate the following NAIC IRIS Ratios for each year, from 2021 to 2024, using R-Dan's actual results for 2021 and revised projections for 2022 to 2024:

(i) (*0.5 points*) IRIS Ratio 2 – Net written premium to policyholders' surplus

Provide the response for this part in the Excel spreadsheet.

(ii) (*5 points*) IRIS Ratio 5 – Two-year overall operating ratio

Provide the response for this part in the Excel spreadsheet.

(iii) (*0.5 points*) IRIS Ratio 7 – Gross change in policyholders' surplus

Provide the response for this part in the Excel spreadsheet.

(iv) (*0.5 points*) IRIS Ratio 8 – Change in adjusted policyholders' surplus

Provide the response for this part in the Excel spreadsheet.

(c) (*2 points*) Determine whether or not each of the NAIC IRIS Ratios calculated in part (b) falls outside the usual range for the ratio. Provide the usual range for the ratios in your determinations.

Provide the response for this part in the Excel spreadsheet.

GIFREU, Fall 2022, Q11

The case study for this question is at https://www.soa.org/49e974/globalassets/assets/files/edu/2022/fall/case-study/gifreu-case-study.pdf

(*10 points*) A-Eye Holdings (A-Eye) has an opportunity to purchase a U.S. general insurance company, O-Bot. O-Bot began operations in 2019 and only writes homeowners insurance policies.

If O-Bot is purchased, A-Eye would have O-Bot and R-Dan enter into an intercompany pooling agreement in which O-Bot would cede 100% of its business to the lead insurer, R-Dan. The business of both companies would be pooled together, for all lines of business and R-Dan would then retrocede 30% of the pooled business back to O-Bot.

In part of its assessment of this potential purchase, A-Eye wants to examine the year-end 2021 financial statements for these two companies under the scenario that the pooling arrangement was in effect and applies to all of the premiums, losses and loss expenses for both companies.

You are given the following Schedule P and Underwriting and Investment Exhibit (UWIE) information for O-Bot as of December 31, 2021 ($000 Omitted):

Schedule P – Part 1A

Year in Which Premiums Were Earned and Losses Incurred	Premiums Earned			Loss and Loss Expense Payments					
				Loss		DCC		AO	
	Direct & Assumed	Ceded	Net	Direct & Assumed	Ceded	Direct & Assumed	Ceded	Direct & Assumed	Ceded
	1	2	3	4	5	6	7	8	9
01. Prior	XXX	XXX	XXX	0	0	0	0	0	0
09. 2019	24,700	600	24,100	17,800	0	500	0	3,000	0
10. 2020	79,800	2,000	77,800	59,500	0	1,400	0	9,900	0
11. 2021	110,300	2,800	107,500	66,000	0	1,500	0	10,400	0
12. Totals	XXX	XXX	XXX	143,000	0	3,400	0	23,300	0

	Losses Unpaid				Defense and Cost Containment Unpaid				Adjusting and Other Unpaid	
	Case Basis		Bulk + IBNR		Case Basis		Bulk + IBNR			
	Direct & Assumed	Ceded	Direct & Assumed	Ceded	Direct & Assumed	Ceded	Direct & Assumed	Ceded	Direct & Assumed	Ceded
	13	14	15	16	17	18	19	20	21	22
01. Prior	0	0	0	0	0	0	0	0	0	0
09. 2019	100	0	0	0	0	0	0	0	0	0
10. 2020	1,350	0	150	0	0	0	0	0	200	0
11. 2021	18,080	0	4,520	0	500	0	0	0	3,600	0
12. Totals	19,530	0	4,670	0	500	0	0	0	3,800	0

	Total Losses and Loss Expenses Incurred		
	Direct & Assumed	Ceded	Net
	26	27	28
01. Prior	XXX	XXX	XXX
09. 2019	21,400	0	21,400

10. 2020	72,500	0	72,500
11. 2021	104,600	0	104,600
12. Totals	XXX	XXX	XXX

Schedule P – Part 2A

Year in Which Losses Were Incurred	Incurred Net Losses and Defense and Cost Containment Expenses Reported at Year-End				
	2017	2018	2019	2020	2021
	6	7	8	9	10
01. Prior	0	0	0	0	0
09. 2019	XXX	XXX	17,500	18,200	18,400
10. 2020	XXX	XXX	XXX	61,800	62,400
11. 2021	XXX	XXX	XXX	XXX	90,600

Schedule P – Part 3A

Year in Which Losses Were Incurred	Cumulative Paid Net Losses and Defense and Cost Containment Expenses Reported at Year-End				
	2017	2018	2019	2020	2021
	6	7	8	9	10
01. Prior	0	0	0	0	0
09. 2019	XXX	XXX	14,400	17,900	18,300
10. 2020	XXX	XXX	XXX	49,300	60,900
11. 2021	XXX	XXX	XXX	XXX	67,500

UWIE – Part 1B – Premiums Written

		Reinsurance Assumed		Reinsurance Ceded		
	Direct Business	From Affiliates	From Non-Affiliates	To Affiliates	To Non-Affiliates	Net Premiums Written
Line of Business	1	2	3	4	5	6
Homeowners multiple peril	138,700	-	-	-	2,800	135,900
TOTALS	138,700	-	-	-	2,800	135,900

UWIE – Part 2 – Losses Paid and Incurred

	Losses Paid Less Salvage				Net Losses Unpaid Curr. Year	Net Losses Unpaid Prior Year
	Direct Business	Reinsurance Assumed	Reinsurance Recovered	Net Payments		
Line of Business	1	2	3	4	5	6
Homeowners multiple peril	77,700	0	0	77,700	24,200	13,300
TOTALS	77,700	0	0	77,700	24,200	13,300

UWIE – Part 2A – Unpaid Losses and Loss Adjustment Expenses

	Reported Losses			
	Direct	Reinsurance Assumed	Deduct Reinsurance Recoverable	Net Losses excl. IBNR
Line of Business	1	2	3	4
Homeowners multiple peril	19,530	0	0	19,530
TOTALS	19,530	0	0	19,530

(a) (*4 points*) Complete the following Schedule P parts for O-Bot's year-end 2021 Annual Statement under this pooling arrangement scenario:

(i) (*2 points*) O-Bot – Schedule P – Part 1 – Summary

(ii) (*2 points*) O-Bot – Schedule P – Part 2 – Summary

Provide the response for this part in the Excel spreadsheet. *Include only the lines and columns as indicated in the Excel file.*

(b) (*5 points*) Complete the following UWIE parts from R-Dan's year-end 2021 Annual Statement under this pooling arrangement scenario:

(i) (*1.5 points*) R-Dan – UWIE – Part 1B – Premiums Written

(ii) (*1.5 points*) R-Dan – UWIE – Part 2 – Losses Paid and Incurred

(iii) (*2 points*) R-Dan – UWIE – Part 2A – Unpaid Losses and Loss Adjustment Expenses

Provide the response for this part in the Excel spreadsheet. *Include only the lines and columns as indicated in the Excel file.*

(c) (*1 point*) Calculate the following Schedule F entries from R-Dan's year-end 2021 Annual Statement under this pooling arrangement scenario:

(i) (*0.5 points*) R-Dan – Schedule F – Part 1 – Column 7 (*Reinsurance on Known Case Losses and LAE*), Row 9999999 (Total)

(ii) (*0.5 points*) R-Dan – Schedule F – Part 3 – Column 6 (*Reinsurance Premium Ceded*), Row 9999999 (Total)

Provide the response for this part in the Excel spreadsheet.

GIFREU, Fall 2022, Q14

(*8 points*) PIC is a U.S.-based general insurer. PIC plans to cede a share of its direct premium and losses on high-value commercial property (HVProp) policies to Q-Re. The inception date for the reinsurance agreement would be January 1, 2022. On November 30, 2021, Q-Re proposed a reinsurance agreement with the following terms:

A. Agreement to cover losses on HVProp policies written from October 1, 2021 to December 31, 2022.

B. Proportional reinsurance with PIC ceding business to Q-Re as follows: 35% ceded on HVProp with an insured value under $8 million, 50% ceded otherwise.

C. Reinsurance premium payable by PIC to Q-Re quarterly from December 31, 2021 through December 31, 2022.

D. There is an event limit of $10 million for any one loss occurrence.

E. Reinsured losses are paid by Q Re to PIC in a lump sum on June 30, 2023.

F. If PIC is unable to financially meet its obligations to claimants, Q-Re will stop reinsured loss payments to PIC or PIC's claimants.

G. PIC is to provide premium and loss payment reports to Q-Re quarterly from December 31, 2021, through June 30, 2023.

H. Termination of the agreement is on a cut-off basis.

I. A provisional commission of 5% is payable by Q-Re to PIC when reinsured premiums are payable. Upon settlement of reinsured losses, the commission is adjusted as follows: sliding scale from a minimum rate of 5% at a 75% loss ratio to a maximum rate of 35% at a 45% loss ratio.

J. The agreement may be canceled by Q-Re at its discretion if PIC's HVProp loss ratio is over 80% for the period from October 1, 2021 to June 30, 2022.

K. BB is the reinsurance intermediary for this agreement. PIC is fully exposed to credit risk from BB.

You are given the following information regarding PIC's HVProp policies:

- Twelve-month policies are written uniformly over the agreement period.
- The expected loss ratio is 55%.
- Insured values will range from $4 million to $30 million.

- The likelihood of an insured event exceeding $10 million for PIC's HVProp book of business is 1-in-150 years.
- Claims are expected to be reported no later than two weeks after occurrence and are settled no later than three months after report.

(a) (*5 points*) Determine which terms, A through K, will likely prevent it from being accounted for as reinsurance under the rules of U.S. statutory accounting. Justify your determinations.

ANSWER:

(b) (*3 points*) Propose a potential revision to each term, if needed, so that the agreement may be accounted for as reinsurance under the rules of U.S. statutory accounting.

ANSWER:

GIFREU, Spring 2023, Q1

(*4 points*) SSAP No. 65 *Property and Casualty Contracts* relates to insurance contracts that have unique features or require specific accounting treatment.

(a) (*2 points*) Provide the following as per SSAP No. 65:

(i) The definition of tabular reserves.

(ii) The purpose of an *extended reporting provision*.

(iii) The timing for when premium should be recognized for tail coverage with an undefined or indefinite policy period.

ANSWER:

An insurance company may purchase an annuity to fund structured settlement payments to a claimant.

(b) (*1.5 points*) Describe how an annuity should be recorded under SSAP No. 65 for each of the following circumstances:

(i) The insurance company has purchased an annuity and they are also the payee.

(ii) The insurance company has purchased an annuity, but the claimant is the payee.

ANSWER:

Annual Statement Note 27 provides for disclosures of structured settlements funded by annuities.

(c) (*0.5 points*) Describe *contingent liability* when the claimant is the payee for the an annuity.

ANSWER:

GIFREU, Spring 2023, Q4

(*5 points*)

(a) (*1 point*) Identify three types of retroactive reinsurance contracts that may qualify for prospective reinsurance accounting treatment under U.S. statutory accounting principles (SAP).

ANSWER:

(b) (*0.5 points*) State why portfolio reinsurance contracts should be accounted for as retroactive reinsurance under SAP.

ANSWER:

Risk transfer testing of a reinsurance contract under SAP requires using the present value of cash flows.

(c) (*2 points*) Identify which of the following cash flows should not be considered in this test. Justify your answer.

(i) Premiums

(ii) Commissions

(iii) Premium taxes

(iv) General expenses

(v) Claims

(vi) Defense and cost containment expenses

(vii) Adjusting and other expenses

(viii) Income taxes

ANSWER:

You are given the following information related to a reinsurance contract.

- Premium is 1,000.
- Reinsurance recoverable is assumed to be certain in the amount of 1,100.
- All loss payments are expected (but not certain) to be made at time t = 5.

(d) (*0.5 points*) State why the interest method of deposit accounting should be used for this contract.

Provide the response for this part in the Excel spreadsheet.

(e) (*1 point*) Calculate the deposit for this contract at time t = 2.

Provide the response for this part in the Excel spreadsheet.

GIFREU, Spring 2023, Q5

(*4 points*)

(a) (*1 point*) Compare the balance sheet treatment of ceded loss and unearned premium reserves under U.S. statutory accounting vs. GAAP accounting.

ANSWER:

A loss occurs on April 1, 2023, on a policy in force. When the loss is reported, the insurer books a case reserve of 1,500 based on the claim adjuster's estimate. The insurer carries a 20% quota share reinsurance arrangement covering the loss.

Assume below that an example of a full accounting entry is as follows:

Bonds, balance sheet asset, 100 debit.

(b) (*1.5 points*) Show the full accounting entries for ceding this loss under U.S statutory accounting.

ANSWER:

Statement of Statutory Accounting Principles (SSAP) 62R discusses three types of risk: underwriting, timing, and investment risk.

(c) (*1.5 point*s) Describe each of these risks.

ANSWER:

GIFREU, Spring 2023, Q7

The case study for this question is at
https://www.soa.org/48ef45/globalassets/assets/files/edu/2023/spring/study-note/gifreu-2023-spring-case-study.pdf

(*9 points*) Calculate the following amounts using information in R-Dan's *Excerpts from the Annual Statement*.

(i) (*1.5 points*) Total unearned premium reserve (UPR), gross of ceded reinsurance, as of year-end 2021.

(ii) (*1 point*) Total loss payments, net of ceded reinsurance, during calendar year 2021.

(iii) (*1 point*) Total defense and cost containment (DCC) expense payments, net of ceded reinsurance, during calendar year 2022.

(iv) (*0.5 points*) Total adjusting and other (A&O) expense payments, net of ceded reinsurance, during calendar year 2022.

(v) (*1.5 points*) Change in net loss and DCC reserves for the Homeowners/Farmowners line of business, during calendar year 2022.

(vi) (*1.5 points*) Average net paid claim (loss and DCC), excluding claims without payment, for the Homeowners/Farmowners line of business, during calendar year 2022. Assume that there are no partial payments on claims.

(vii) (*2 points*) Investment Gain Ratio (IGR) used in the 2022 Insurance Expense Exhibit (IEE).

Provide the response in the Excel spreadsheet.

GIFREU, Spring 2023, Q9

The case study for this question is at https://www.soa.org/48ef45/globalassets/assets/files/edu/2023/spring/study-note/gifreu-2023-spring-case-study.pdf

(*10 points*) R-Dan's year-end 2022 reported liabilities, underwriting income and investment income were reported correctly. However, year-end 2022 reported values for admitted amounts invested in bonds were overstated by 2.25%.

(a) (*5 points*) Demonstrate which of the following IRIS ratios move from a "pass" to a "fail" when correcting for the overstatement. Ratios provided below are based on values before correction.

(i) Ratio 1 (GWP to PHS), 2.95

(ii) Ratio 2 (NWP to PHS), 2.90

(iii) Ratio 5 (2-year operating ratio), 102.5%

(iv) Ratio 6 (investment yield), 5.11%
Note: The usual range for IRIS Ratio 6 in 2022 is between 2% and 5.5%.

(v) Ratio 7 (gross change in PHS), 0.14%

(vi) Ratio 8 (change in adjusted PHS), –4.64%

(vii) Ratio 11 (1-year reserve development to PHS), 17.31%

(viii) Ratio 12 (2-year reserve development to PHS), 19.67%

(ix) Ratio 13 (estimated current reserve deficiency to PHS), 15.99%

Provide the response for this part in the Excel spreadsheet.

Assume that R-Dan passes IRIS ratio tests 3, 4, 9 and 10 based on reported values and reported values after correction.

(b) (*1 point*) Explain the implications for R-Dan from the results of part (a).

Provide the response for this part in the Excel spreadsheet.

The following NAIC RBC risk charge amounts were calculated using R-Dan's reported values as of year-end 2022:

	Amount ($000)
R_0 Asset risk charge–Subsidiary insurance companies and miscellaneous other amounts	56
R_1 Asset risk charge–Fixed income	8,817
R_2 Asset risk charge–Equity	5,283
R_3 Asset risk charge–Credit	2,211
R_4 Underwriting risk charge–Reserves	33,866
R_5 Underwriting risk charge–Net written premium	47,009
R_{CAT} Catastrophe risk charge	17,809

- The R_1 risk charge of $8,817,000 includes $8,148,000 for bonds, $20,000 for other fixed income assets and $649,000 from the asset concentration charge.

- The asset concentration charge of $649,000, included in the R_1 risk charge, is comprised of $151,000 from Class 2 bonds and $498,000 in total from Class 3 to Class 5 bond classes.

- The R_3 and R_4 risk charges provided in the table have been adjusted for reinsurance credit risk.

(c) (*0.5 points*) Determine R-Dan's 2022 NAIC RBC ratio before correcting for the overstatement.

Provide the response for this part in the Excel spreadsheet.

(d) (*3.5 points*) Determine R-Dan's 2022 NAIC RBC ratio after correcting for the overstatement under each of the following assumptions:

(i) The overstatement was uniform across all bonds.

(ii) The overstatement was from non-U.S. government guaranteed bonds in Class 1 and Class 2 only.

Provide the response for this part in the Excel spreadsheet.

GIFREU, Spring 2023, Q11

(*5 points*) U.S. statutory accounting principles (SAP) include the concept of nonadmitted assets while GAAP accounting does not.

(a) (*1 point*) Explain why there is this difference in accounting treatment.

ANSWER:

Equipment and operating software are admitted with limitation under SAP even though these assets cannot be used to pay claims.

(b) (*0.5 points*) State why SAP admits these assets.

ANSWER:

You are given the following information for a claims-made policy:

- An insurer wrote an annual claims-made policy effective July 1, 2022.
- The total written premium of 1,200 is billed in quarterly installments due the first day of each quarter.
- The agent's commission of 10% is paid on the policy effective date.
- The insurer has collected premiums of 300 from the agent as of December 31, 2022, however, the insured has paid premiums of 600 to the agent.
- The general expense ratio is 20%.
- The expected loss ratio for this policy is 70%.
- An accident occurs on December 28, 2022. The claim is reported January 5, 2023 with a case reserve of 1,100. The claim closes on January 20, 2023 with a single payment of 1,000.

(c) (*3.5 points*) Calculate the following amounts as of December 31, 2022:

(i) SAP income

(ii) Change in SAP surplus

(iii) GAAP income

(iv) Change in GAAP equity

Provide the response for this part in the Excel spreadsheet.

GIFREU, Spring 2023, Q12

(*4 points*) MSY Insurance is reinsured by JAC Re. MSY's claims recoverable from JAC Re for 2022 are shown in the following table:

Claim #	Amount ($000)	Accident Date	Paid Date MSY to Claimant	Paid Date JAC Re to MSY
1	1,300	4-Jan	5-Feb	Unpaid, denied liability
2	14,200	12-Jan	3-Mar	17-Jul
3	9,700	5-Mar	20-Jul	Unpaid
4	2,100	22-Jun	10-Aug	5-Sep
5	2,800	27-Jul	29-Sep	Unpaid, denied liability
6	12,400	12-Aug	7-Nov	12-Dec
7	2,200	26-Aug	21-Oct	Unpaid
8	5,000	12-Sep	29-Nov	28-Dec
9	9,900	1-Oct	Unpaid	Unpaid
10	16,300	5-Dec	28-Dec	Unpaid

- MSY has filed suit against JAC Re to collect $1.3 million relating to claim 1, and the case is in litigation.
- MSY is discussing claim 5 with JAC Re, but no suit has been filed.
- MSY's reinsurance treaty with JAC Re does not specify due dates or dates when claims must be presented for payment.
- MSY reports claims to JAC Re when the primary loss is paid.

(a) (*3 points*) Determine if JAC Re is considered a slow-paying reinsurer for MSY's Schedule F purposes as of December 31, 2022.

Provide the response for this part in the Excel spreadsheet.

Insurers may use a Line of Credit (LoC) as a securing agreement for reinsurance.

(b) (*0.5 points*) Describe the requirement for an insurer to use a LoC to offset the statutory provision for reinsurance.

Provide the response for this part in the Excel spreadsheet.

(c) (*0.5 points*) Explain why securing agreements do not affect the determination of a slow-paying reinsurer.

Provide the response for this part in the Excel spreadsheet.

GIFREU, Fall 2023, Q1

(*4 points*) U.S. statutory accounting requires that it be reasonably possible for a reinsurer to realize a significant loss in a reinsurance agreement for the insurer to use reinsurance accounting for that reinsurance agreement.

(a) (*1.5 points*) Describe the calculation steps for evaluating loss significance.

ANSWER:

An alternative condition will also permit the use of reinsurance accounting even when it is not reasonably possible for a reinsurer to realize a significant loss.

(b) (*1 point*) Describe this condition.

ANSWER:

(c) (*0.5 points*) Identify a type of reinsurance that uses the alternative condition from part (b) to permit the use of reinsurance accounting.

ANSWER:

(d) (*1 point*) Explain why a reinsurance contract that features accumulating retentions from multiple years could result in the contract <u>not</u> being accounted for as reinsurance.

ANSWER:

GIFREU, Fall 2023, Q5

(*5 points*) The main function of Schedule F in U.S. statutory accounting is to show the calculation of the statutory provision for reinsurance.

(a) (*0.5 points*) Identify two other key functions of Schedule F.

ANSWER:

One of the columns in Schedule F indicates whether or not a reinsurance contract cedes more than 75% of direct premiums written. This is indicated by inclusion of Special Code 2 in that column. These contracts are generally viewed as fronting arrangements.

(b) (*1 point*) Explain why an insurance company might enter into a fronting arrangement.

ANSWER:

(c) (*1 point*) Explain why insurance regulators should be interested in a company using fronting arrangements.

ANSWER:

Some reinsurance contracts ceding more than 75% of direct premiums written are exempt from having an indicator of Special Code 2.

(d) (*0.5 points*) Identify two types of reinsurance contracts that are under this exemption.

ANSWER:

Different estimates for amounts of uncollectible reinsurance are found in the following:

I. Schedule F in U.S. statutory accounting
II. GAAP accounting
III. Statement of Actuarial Opinion (SAO).

(e) (*2 points*) Compare these three estimates of amounts for uncollectible reinsurance.

ANSWER:

GIFREU, Fall 2023, Q7

Provide the response for this question in the Excel spreadsheet.

(*4 points*) Statement of Statutory Accounting Principles (SSAP) No. 53, *Property Casualty Contracts—Premiums*, specifies two methods for the recording of estimates for audit premiums.

- Method 1 – Adjustment through written premium
- Method 2 – Adjustment through earned premium

You are given the following information for an insurance policy:

- An insurer wrote an annual policy on April 1, 2022, with written premium of $6,000 booked at policy inception.
- The premium is billed quarterly and due the first day of each quarter.
- On December 31, 2022, the insurer estimates that the final policy audit will add $1,000 of premium.

(d) (*1.5 points*) Calculate the following under U.S. statutory accounting for each method (Method 1 and Method 2):

(i) Written premium for 2022

(ii) Earned premium for 2022

(iii) Unearned premium as of December 31, 2022

Continuing with the same policy above, you are informed that the final audit at the end of the policy term adds $500 of premium, and the policy does not renew.

(e) (*1 point*) Calculate the following under U.S. statutory accounting for each method (Method 1 and Method 2):

(i) Written premium for 2023

(ii) Earned premium for 2023

(f) (*0.5 points*) Provide the reason why Method 1 is required under U.S. tax accounting when recognizing audit premiums.

(g) (*1 point*) Describe the concept of *revenue offset* with respect to the calculation of premium revenue under U.S. tax accounting.

GIFREU, Fall 2023, Q8

The case study for this question is at https://www.soa.org/4a7b7f/globalassets/assets/files/edu/2023/fall/case-study/gifreu-case-study.pdf

Provide the response for this question in the Excel spreadsheet.

(*4 points*) Assume that in R-Dan's Annual Statement, agents' balances were overstated by 15% for 2022 and 10% for 2021. The amounts overstated were due to an accounting error as the balances were collected and should have been recorded as a cash asset.

You are to revise R-Dan's 2022 Insurance Expense Exhibit (IEE) calculations correcting for the overstatement wherever necessary. In order to make these revisions, you are only provided with the following information: the 2022 IEE and Annual Statement pages 2 to 4.

Calculate the following for R-Dan's 2022 IEE, corrected for the overstatement of agents' balances and subject to the information limitation noted above:

(i) Prepaid expense ratio underlying the 2022 IEE calculations for all lines combined total

(ii) Investment gain ratio for the 2022 IEE calculations

(iii) Investment gain on funds attributable to insurance transactions for all lines combined total

(iv) Investment gain attributable to capital and surplus for all lines combined total

GIFREU, Fall 2023, Q9

The case study for this question is at
https://www.soa.org/4a7b7f/globalassets/assets/files/edu/2023/fall/case-study/gifreu-case-study.pdf

Provide the response for this question in the Excel spreadsheet.

(*9 points*)

(a) (*2 points*) Complete the following table with respect to the NAIC RBC Ratio:

Action Level	NAIC RBC Ratio Range	Action by Insurer	Action by Regulator
No Action		No action required	No action required
Regulatory action level			
Mandatory control level			

You are given the following information for R-Dan's 2022 NAIC RBC calculation.

Amount (in thousands)	Private Passenger Auto Liability (PPA)	Commercial Auto Liability (CA)	Auto Physical Damage (APD)	Special Property (SP)
Basic reserving charge	28,175	48	343	0

Annual Growth Rates	Premium Growth Rates, All Lines Combined			
	Gross Written	Gross Earned	Net Written	Net Earned
Average last 3	10.09%	9.31%	10.18%	9.36%
Average last 5	7.98%	7.52%	8.67%	7.49%

(b) (*4.5 points*) Calculate the following amounts for R-Dan's 2022 NAIC RBC:

(i) Homeowners/Farmowners (H/F) basic reserving charge

(ii) R_4 risk charge before adjustment for credit risk

You are given the following additional information:

R-Dan's 2022 NAIC RBC Risk Charges	Amount (in thousands)
R_0 charge	56
R_1 charge	8,817
R_2 charge	5,283
R_3 charge before adjustment	3,761
R_3 charge after adjustment	2,211
R_5 charge	47,009

R-Dan's Catastrophe Model Results for 2022				
Basis	**Value at Risk (VaR) for Risk Level**	**Catastrophe VaR (in thousands)**		
		Earthquake (EQ)	**Hurricane (HUR)**	**Wildfire (WF)**
Gross of Reinsurance	**87.5%**	0	18,000	3,000
	99%	5,000	27,000	8,000
	99.5%	45,000	56,500	12,000
Net of Reinsurance	**87.5%**	0	14,000	4,000
	99%	3,500	24,000	7,000
	99.5%	33,000	38,500	10,000

(c) (*2.5 points*) Calculate the following amounts for R-Dan's NAIC RBC:

(i) Total RBC after covariance and before basic operational risk

(ii) NAIC RBC Ratio

(iii) Range of policyholders surplus that would trigger *regulatory action level*

GIFREU, Fall 2023, Q13

(*5 points*) An *average paid severity* development triangle may be created using Schedule P Part 3 divided by Schedule P Part 5 (Section 1).

(a) (*1 point*) Describe two potential issues that may limit the usefulness of this triangle for a trend analysis even when there is a sufficient volume of claims data to make inferences.

ANSWER:

(b) (*2 points*) Explain the effect on a company's Schedule P Parts 2 to 5 if one of its reinsurers becomes insolvent and its reinsurance recoverables become uncollectible.

ANSWER:

(c) (*2 point*) Provide the following with respect to Schedule P Part 6:

(i) Description of what is included in this part

(ii) Purpose of this part

(iii) Two Schedule P lines of business that are included this part

ANSWER:

GIFREU, Fall 2023, Q14

(*4 points*) The NAIC establishes statutory accounting principles for insurers in the NAIC Accounting Practices and Procedures Manual through a number of Statements of Statutory Accounting Principles (SSAPs).

(a) (*1 point*) Describe two methods that can be used for the computation of the unearned premium reserve as noted in SSAP No. 53, *Property Casualty Contracts-Premiums*.

ANSWER:

(b) (*1 point*) Describe the circumstances under which an insurer should establish a premium deficiency reserve under SSAP No. 53.

ANSWER:

(c) (*1 point*) Identify two examples of loss adjustment expenses under each of the following broad categories as defined in SSAP No. 55, *Unpaid Claims, Losses and Loss Adjustment Expenses*:

(i) Defense and Cost Containment (DCC)

(ii) Adjusting and Other (AO)

ANSWER:

(d) (*1 point*) Describe the purpose of an *insolvency clause* as detailed in SSAP No. 62R, *Property and Casualty Reinsurance*.

ANSWER:

GIFREU, Spring 2024, Q2

(*5 points*)

(a) (*2 points*) Compare U.S. GAAP to U.S. Statutory Accounting with respect to the following:

(i) Primary purpose of the accounting system

(ii) Basis for the assumptions used in the accounting system

ANSWER:

(b) (*1.5 points*) Provide one example of how each of the following concepts is applied under U.S. Statutory Accounting:

(i) Conservatism

(ii) Consistency

(iii) Recognition

ANSWER:

Reinsurance contracts commonly include either a cut-off termination provision or a run-off termination provision.

(c) (*1 point*) Compare a reinsurer's liability for loss under these two termination provisions based on U.S. statutory accounting.

ANSWER:

(d) (*0.5 points*) Identify the party that is ultimately responsible for deciding if it is reasonably possible for a significant loss under a reinsurance risk transfer test.

ANSWER:

GIFREU, Spring 2024, Q5

(*3 points*) The NAIC RBC formula includes a risk charge, R_0, for investments in insurance company subsidiaries and miscellaneous other amounts.

(a) (*0.5 points*) Provide two types of off-balance-sheet items included in the calculation of R_0.

ANSWER:

(b) (*0.5 points*) Identify where the amounts in part (a) are found in the Annual Statement.

ANSWER:

(c) (*1 point*) Provide the risk charge formula for the following:

(i) Amounts in part (a)

(ii) Investments in alien insurance affiliates

ANSWER:

The NAIC RBC formula is:

$$R_0 + \sqrt{R_1^2 + R_2^2 + R_3^2 + R_4^2 + R_5^2 + R_{CAT}^2}\ .$$

(d) (*0.5 points*) Explain why R_0 is included outside the square root in the RBC formula.

ANSWER:

(e) (*0.5 points*) Identify where risk charges for *investments in affiliated non-insurance companies* should be included in the RBC formula.

ANSWER:

GIFREU, Spring 2024, Q6

(*6 points*)

(a) (*1.5 points*) Compare the accounting concepts of incurred taxes and current tax liability.

ANSWER:

(b) (*3 points*) Compare tax accounting to statutory accounting in the United States with respect to the following:

(i) Premium revenue

(ii) Incurred losses

ANSWER:

U.S. tax accounting includes a proration provision for municipal bond interest income.

(c) (*0.5 points*) State why the proration provision was introduced for insurers.

ANSWER:

(d) (*1 point*) Create a numerical example showing how the proration provision modifies the effective tax rate.

ANSWER:

GIFREU, Spring 2024, Q8

The case study for this question is at https://www.soa.org/48f9b0/globalassets/assets/files/edu/2024/spring/case-study/gifreu-case-study.pdf

Provide the response for this question in the Excel spreadsheet.

(*7 points*) Determine the following amounts for R-Dan using the information included in the Annual Statement as of December 31, 2023:

(i) *Losses and Defense and Cost Containment Expenses* unpaid as of December 31, 2022, net of ceded reinsurance, for all lines of business combined, by accident year.

(ii) *Adjusting and Other Expenses* paid during calendar year 2023, net of ceded reinsurance, for all lines of business combined, total of all accident years.

(iii) *Defense and Cost Containment Expenses* paid during calendar year 2022, net of ceded reinsurance, for all lines of business combined, total of all accident years.

(iv) *Adjusting and Other Expenses* paid during calendar year 2022, net of ceded reinsurance, for all lines of business combined, total of all accident years.

(v) Average *Loss and Defense and Cost Containment Expenses* unpaid as of December 31, 2022, net of ceded reinsurance, for the Private Passenger Liability/Medical line of business, total of all accident years.

(vi) Ratio of *number of claims closed without payment* to *number of claims reported* during calendar year 2023, for the Homeowners/Farmowners line of business, accident year 2023.

(vii) *Unearned Premium* as of December 31, 2022, gross of ceded reinsurance (i.e., direct plus assumed), for all lines of business combined.

GIFREU, Spring 2024, Q9

The case study for this question is at
https://www.soa.org/48f9b0/globalassets/assets/files/edu/2024/spring/case-study/gifreu-case-study.pdf

Provide the response for this question in the Excel spreadsheet.

(*6 points*) Calculate the following for R-Dan's NAIC RBC as of December 31, 2023:

(i) *Bond size adjustment factor*

(ii) *Asset concentration charge* for fixed income securities

(iii) *Asset concentration charge* for equities

(iv) R_1 risk charge

(v) R_2 risk charge

(vi) Excessive Growth Charge for Reserves

(vii) Excessive Growth Charge for Premium

GIFREU, Spring 2024, Q11

(*6 points*) Statements of Statutory Accounting Principles (SSAP) No. 9 defines subsequent events and establishes the criteria for reporting such events under U.S. statutory accounting. It includes accounting rules for two types of material subsequent events: Type I and Type II.

(a) (*1 point*) Define each of Type I and Type II subsequent events.

ANSWER:

(b) (*1.5 points*) Compare the statutory accounting treatment for Type I and Type II subsequent events.

ANSWER:

SSAP No. 53 describes the principles for reporting general insurance premium revenue.

(c) (*0.5 points*) Define *advance premiums*.

ANSWER:

(d) (*1.5 points*) Describe the statutory accounting treatment of *advance premiums*.

ANSWER:

SSAP No. 55 describes the principles for recording liabilities for unpaid claims and claim adjustment expenses.

You are given the following information regarding the unpaid claims and claim adjustment expenses for a general insurance company:

Line of Business	**Management's Best Estimate (in $ millions)**		
	Range Covering a 99.9% Probability	**Range Covering a 70% Probability**	**Most Likely Amount**
A	3 to 88	15 to 26	18
B	2 to 136	24 to 59	Undetermined

(e) (*1 point*) Determine the total accrued amount for unpaid claims and claim adjustment expenses according to SSAP No. 55. Justify your determination.

ANSWER:

SSAP No. 55 includes a discussion of methods for estimating loss and loss adjustment expense reserves.

(f) (*0.5 points*) Describe what SSAP No. 55 recommends in this discussion.

ANSWER:

GIFREU, Spring 2024, Q12

(*4 points*) NAIC IRIS Ratio 3, *Change in Net Premiums Written*, has a normal range with both a lower and an upper bound.

(a) (*3 points*) Explain why each of the following ratios should be examined when IRIS Ratio 3 exceeds the upper bound:

(i) Ratio 2 (Net Premiums Written to Policyholders' Surplus)

(ii) Ratio 5 (Two-Year Overall Operating Ratio)

(iii) Ratio 9 (Adjusted Liabilities to Liquid Assets)

(iv) Ratios 11, 12 and 13 (Reserve ratios)

ANSWER:

Total liabilities in the numerator of the formula for IRIS Ratio 9 are reduced by *deferred agents' balances*.

(b) (*1 point*) Explain the reason for this reduction.

ANSWER:

GIFREU, Fall 2024, Q4

(*9 points*) The NAIC RBC formula includes a loss concentration factor (LCF) and a written premium concentration factor (WPCF).

(a) (*1 point*) Show the formula for each of LCF and WPCF.

ANSWER:

(b) (*1 point*) Explain how each of the concentration factors gets applied within the RBC formula.

ANSWER:

The NAIC RBC formula includes a charge for excessive premium growth.

(c) (*1.5 points*) Describe the following regarding the charge for excessive premium growth:

(i) Formula(s) to compute the charge

(ii) Method(s) for including the charge in the RBC formula

ANSWER:

The NAIC RBC formula includes a reinsurance credit risk adjustment.

(d) (*1.5 points*) Describe the following regarding this adjustment:

(i) Purpose of the adjustment

(ii) Method for application of the adjustment

ANSWER:

GIFREU, Fall 2024, Q8

Provide the response for this question in the Excel spreadsheet.

(*5 points*) A recent sample of claims from R-Dan's Homeowners line of business produced the following relativities of Adjusting & Other (AO) expenses by type of claim:

Reported claim	4.5
Claim closed with payment	3.0
Claim closed with no payment	1.5
Outstanding claim	1.0

R-Dan's Homeowners AO expenses paid for calendar year 2023 were 13.25 million.

(a) (*4 points*) Calculate the calendar year 2023 AO expense payments by accident year using the methodology from *General Insurance Financial Reporting Topics*, the sample relativities provided here, and the claim counts from R-Dan's Annual Statement.

(b) (*1 point*) Determine if the amounts from part (a) are consistent with the amounts reported in R-Dan's Annual Statement.

GIFREU, Fall 2024, Q9

Provide the response for this question in the Excel spreadsheet.

(*4 points*) R-Dan's total reinsurance cessions (premiums, losses and loss adjustment expenses as reported in R-Dan's annual statement) are assumed by two reinsurers as follows:

Reinsurer	**Share of R-Dan's Ceded**		**Secured by Reinsurer (% Reinsurer's All Lines Share)**	**Amount in Dispute (% Reinsurer's All Lines Share)**
	Automobile Liability (Private Passenger and Commercial)	**All Other Lines of Business**		
A-Re	70%	10%	65%	9.3%
B-Re	30%	90%	55%	4.6%

- A-Re, B-Re, and R-Dan are not affiliated with each other in any way.
- The percent distribution by line of business (LOB) for ceded unearned premium is the same as that for ceded earned premium.
- The percent distribution by LOB for amounts recoverable from reinsurers on R-Dan's paid claims is the same as that for reinsurance already recovered on R-Dan's paid claims.
- All amounts in dispute are in arbitration.

Complete the following for R-Dan's Annual Statement Note 23, Reinsurance, as of December 31, 2023:

(i) (*3 points*) Note 23A, Unsecured Reinsurance Recoverables

(ii) (*1 point*) Note 23B, Reinsurance Recoverables in Dispute

GIFREU, Fall 2024, Q10

Provide the response for this question in the Excel spreadsheet.

(*12 points*) An independent review of R-Dan's reserves determined that the insurer's total loss and loss adjustment expense (L&LAE) reserves should have been 2% higher at year-end 2022 and 17% higher at year-end 2023.

R-Dan's management is reviewing the insurer's NAIC IRIS ratios under the following two scenarios:

I. Using amounts as reported in the 2023 financial statement.

For scenario I, 2023 IRIS Ratios 5, 11, 12, and 13 for R-Dan are as follows:

Ratio 5, Two-year overall operating ratio	102.5%
Ratio 11, One-year reserve development to policyholders surplus (PHS)	17.3%
Ratio 12, Two-year reserve development to PHS	19.7%
Ratio 13, Estimated current reserve deficiency to PHS	16.0%

II. Using amounts as reported in the 2023 financial statement after making all required adjustments as determined in the independent review.

For scenario II, it is assumed that there is no premium deficiency reserve (PDR) to be included in the results.

(a) (*8 points*) Calculate R-Dan's 2023 IRIS ratios 5, 11, 12 and 13 under scenario II.

(b) (*1 point*) Determine if IRIS ratios 5, 11, 12 and 13 are in the usual range for each of scenarios I and II.

You are provided with the following amounts (in thousands) from R-Dan's 2023 RBC calculations under scenario I:

R_0	R_1	R_2	R_3	R_4	R_5	R_{CAT}
150	8,820	5,290	2,250	33,870	47,000	18,440

R_3 and R_4 are presented after the adjustment for credit risk from reinsurance recoverables.

(c) (*1.5 points*) Calculate R-Dan's 2023 NAIC RBC Ratio under both scenarios.

(d) (*1.5 points*) Explain what adjustments may be required to R-Dan's projected financials (Section 6 of the case study) to be consistent with scenario II.

GIFREU, Fall 2024, Q12

(*4 points*) Statement of Statutory Accounting Principle (SSAP) No. 53 provides the U.S. statutory accounting rules for general insurance contract premiums.

(a) (*1 point*) Describe the circumstances under which a premium deficiency reserve should be recorded under the rules of SSAP No. 53 for a general insurance company.

ANSWER:

SSAP No. 66 provides the accounting rules for retrospectively rated contracts.

(b) (*1 point*) Describe how accrued additional retrospective premiums are to be recorded under the rules of SSAP No. 66 for a general insurance company.

ANSWER:

(c) (*1 point*) Identify two SSAP No. 66 disclosures.

ANSWER:

Definitions for portfolio reinsurance are include in both SSAP 62R and the NAIC Annual Statement Instructions regarding Schedule F.

(d) (*1 point*) Identify the difference between the two definitions.

ANSWER:

GI 302 Learning Objective 4 Curated Past Exam Questions

GIFREU, Fall 2020, Q4

(*5 points*)

(a) (*2 points*) Compare the purpose of the following three NAIC required documents:

(i) Statement of Actuarial Opinion (SAO)

(ii) Actuarial Opinion Summary (AOS)

(iii) Actuarial Report

ANSWER:

Actuarial Standard of Practice (ASOP) No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, describes several dates.

(b) (*1.5 points*) Describe each of the following dates according to ASOP No. 36.

(i) Accounting Date

(ii) Review Date

(iii) Valuation Date

ANSWER:

ASOP No. 36 recommends that opining actuaries review the prior opining actuary's work.

(c) (*1.5 points*) Describe what ASOP No. 36 specifies that the opining actuary should include in this review.

ANSWER:

GIFREU, Fall 2020, Q12

NOTE: This item also applies to Learning Objective 3.

The case study for this question is at https://www.soa.org/globalassets/assets/files/edu/2020/fall/intro-study-notes/fall-2020-exam-gifreu-case-study.pdf

(*4 points*) NAIC instructions for the Actuarial Report state that the appointed actuary must reconcile the data used to estimate reserves with the data reported in Schedule P.

(a) (*1 point*) Explain whether or not Sue Calvin's Schedule P reconciliation for R-Dan, as documented in her Actuarial Report, satisfies the NAIC instructions.

ANSWER:

Sue Calvin's point estimate for R-Dan's unpaid homeowner's losses included $8 million for a hurricane which occurred late in 2018.

- This estimate was based on the output of a new hurricane model which R-Dan implemented in 2018.
- The model was run by Jerome Stewart, FSA, FCAS, MAAA who has been leading the Risk Management Department at R-Dan and running catastrophe models for 5 years.
- The data used in the model was audited by R-Dan's Internal Audit Department.
- Sue has no direct hurricane modeling experience and did not review R-Dan's model. However, as a consultant, Sue is generally familiar with the operation of hurricane models and she did review the results for reasonability.

(b) (*2 points*) Assess whether or not any disclosures are needed in Sue's Statement of Actuarial Opinion for R-Dan with respect to the 2018 hurricane loss. Justify your assessment.

ANSWER:

At R-Dan's request, Sue Calvin performed a premium deficiency reserve (PDR) calculation for R-Dan as of December 31, 2018.

Her estimates by line of business were as follows:

Line of Business	Unearned Premiums as of Dec. 31, 2018 ($000)	Estimated Equity in Unearned Premium Reserves ($000)
Private passenger auto liability	62,500	(3,125)
Commercial auto liability	500	25
Automobile physical damage	46,000	1,060
Homeowners multiple peril	98,700	10,365
Special Property	1,100	275

(c) (*1 point*) Recommend a PDR for R-Dan to book (if any) based on Sue Calvin's work. Justify your recommendation.

ANSWER:

GIFREU, Spring 2021, Q5

NOTE: This item also applies to Learning Objective 3.

(*6 points*)

(a) (*1.5 points*) Describe four Statement of Actuarial Opinion (SAO) disclosures related to rendering a Qualified Opinion for a U.S. general insurance company.

ANSWER:

An actuary's analysis of unpaid claims may result in a point estimate, a range of reasonable estimates, or both.

(b) (*1 point*) Describe the U. S. statutory requirements for reporting each of these estimates in the following documents:

(i) Actuarial Report

(ii) Actuarial Opinion Summary (AOS)

ANSWER:

(c) (*1 point*) Explain why the Appointed Actuary's estimate of unpaid claims is not included in a U.S. SAO.

ANSWER:

In a U.S. SAO, the Appointed Actuary must state that he or she has reviewed the data for reasonableness.

(d) (*1 point*) Describe a data review as defined in Actuarial Standard of Practice (ASOP) 23, *Data Quality*.

ANSWER:

U.S. statutory accounting includes rules on the reporting of financial reinsurance in the NAIC Annual Statement.

(e) (*1 point*) Describe the reporting of ceded financial reinsurance in the Annual Statement with respect to underwriting income and loss reserves.

ANSWER:

A significant portion of the legal defense costs in pollution cases relate to attorney fees for declaratory judgement (DJ) actions. A DJ is a legal determination made by the court to resolve a legal uncertainty.

(f) (*0.5 points*) Describe how DJ legal fees are reflected in Schedule P of the NAIC Annual Statement.

ANSWER:

GIFREU, Spring 2021, Q6

(*4 points*) The Board of Directors for BCD General Insurance, a U.S. general insurer, decided to replace its Appointed Actuary (AA) for the upcoming Statement of Actuarial Opinion (SAO).

BCD management had a material disagreement with the former AA on matters regarding the Risk of Material Adverse Deviation (RMAD) disclosure in the prior opinion. This disagreement was resolved with the former AA for the prior opinion. The former AA did not include the wording for the RMAD disclosure that was the cause of the disagreement. There were no unresolved material disagreements with the former AA.

Both the former AA and the replacement AA are independent consultants.

The NAIC instructions to the SAO outline the reporting responsibilities for insurance company boards when replacing the AA.

Outline these responsibilities, in chronological order, for BCD's board in this scenario.

ANSWER:

GIFREU, Spring 2021, Q17

(*4 points*)

(a) (*1 point*) Describe a situation in which an Appointed Actuary may render each of the following types of Opinions in the U.S. Statement of Actuarial Opinion (SAO):

(i) Qualified

(ii) No opinion

ANSWER:

You are the Appointed Actuary for ABC General Insurance Company (ABC) domiciled in the state of Ohio. ABC carries 116 million on a gross basis and 36 million on a net basis. You have reached the following conclusions based on your analysis of unpaid loss and loss adjustment expenses as of December 31, 2020:

- Gross point estimate of 100 million with a reasonable range from 93 to 110 million
- Net point estimate of 40 million with a reasonable range from 38 to 43 million

(b) (*2.5 points*) Prepare parts A through C of the Opinion section of the SAO.

ANSWER:

(c) (*0.5 points*) Identify one risk factor to mention as a company-specific risk factor in the *Relevant Comments* section of the SAO.

ANSWER:

GIFREU, Fall 2021, Q2

(*5 points*) You are the Appointed Actuary for WXY Insurance, a U.S. domiciled general insurance company. At year-end 2020, your actuarial analysis for gross unpaid loss and LAE reflects the following:

- an actuarial central estimate of 60 million,
- a range of reasonable estimates from 54 to 69 million,
- WXY carries reserves of 63 million,
- there is no reinsurance, and
- the Statement of Actuarial Opinion (SAO) indicates a reasonable carried amount.

(a) (*0.5 points*) Determine when a risk of material adverse deviation would be indicated in the SAO for WXY, given the information above.

Provide the response for this part in the Excel spreadsheet.

(b) (*2.5 points*) Prepare parts A through D of the Actuarial Opinion Summary (AOS) for WXY.

Provide the response for this part in the Excel spreadsheet.

On March 15, 2021, WXY discovered a computer file containing 10 million of case reserves for claims that occurred in 2020. Neither you nor the insurer considered these case reserves for year-end 2020 statutory financial reporting.

(c) (*1 point*) State two key determinations that the Appointed Actuary must make regarding whether or not the SAO issued previously was in error.

ANSWER:

(d) (*1 point*) State an additional communication that the insurer would require of you as the Appointed Actuary if you determine that the SAO was in error.

ANSWER:

GIFREU, Fall 2021, Q12

The case study for this question is at
https://www.soa.org/4a203c/globalassets/assets/files/edu/2021/fall/case-study/gifreu-case-study.pdf

(*7 points*) Sue Calvin is the Appointed Actuary (AA) for R-Dan General Insurance Company (R-Dan). In her Statement of Actuarial Opinion (SAO), Sue Calvin opined that R-Dan's reserves made a reasonable provision for the liabilities she specified.

(a) (*2.5 points*) Critique Sue Calvin's opinion that reserves are reasonable.

ANSWER:

Sue Calvin selected a materiality standard of $29 million for R-Dan's risk of material adverse deviation (RMAD) as the minimum of 15% of statutory surplus and 10% of net loss and loss adjustment expense.

(b) (*1 point*) State two alternative materiality standards that may be appropriate for an RMAD.

ANSWER:

(c) (*2 points*) Select the materiality standard you would have used if you were the AA for R-Dan (whether the same or different from that selected by Sue Calvin). Justify your selection.

ANSWER:

For the 2021 opinion, Sue Calvin is considering making use of a third-party consultant to perform a portion of the reserve analysis to be included in the actuarial report.

(d) (*1.5 points*) Describe what Sue Calvin should consider when doing this in accordance with ASOPs.

ANSWER:

GIFREU, Spring 2022, Q3

NOTE: This item also applies to Learning Objective 3.

(*8 points*) LIT, a U.S. liability insurer, has hired a consultant to be the Appointed Actuary (AA) for the preparation of its first Statement of Actuarial Opinion (SAO). In prior years, LIT had an exemption from filing an SAO. However, LIT is not exempt for the current year.

LIT provided the AA with data to prepare the SAO. The AA has selected a materiality standard of $500,000 for the RMAD in the SAO.

The AA reviewed the data and raised the following issues to LIT:

- The reserving data appears reasonable and reconciled to the Schedule P data on an all-lines combined basis. However, the data included several differences totaling approximately $300,000 when compared on a line of business (LOB) basis.

- LIT does have liabilities for asbestos and environment (A&E) claims. However, LIT did not provide any information related to these claims because they believe them to be immaterial.

- Within LIT's Annual Statement, the Schedule P Part 1 Salvage and Subrogation (S&S) columns (10 and 23) contain zeros for all years and all LOBs.

After informing LIT of these data issues, the AA was provided with the following additional information:

- LIT's reserving data is based upon policy level groupings such that some policies, which include more than one LOB will be grouped into the LOB with the greatest contribution to premium. In contrast, LIT's Schedule P data is reported in true LOB detail based on claims data. The two data sources do reconcile after minimal necessary aggregation.

- LIT provided two sets of A&E claims data. One from the claims department and one from the accounting department. The reserves in the two data sets do not match and there is no explanation for the difference. The claims data shows A&E reserves in the amount of $350,000 while the accounting data shows $500,000. Both departments state that the data includes only case loss reserves (including defense and cost containment expenses) and excludes IBNR. For the carried reserves, the company used the accounting data with no IBNR. LIT notes that A&E data has been removed from LIT's reserving data. LIT does not disclose A&E liabilities in the Annual Statement.

- Current reserving data is net of S&S amounts. LIT has data available to complete the S&S columns but proposes waiting until next year to disclose the S&S amounts in Schedule P Part 1.

Describe how the AA should proceed in the preparation of LIT's SAO, with respect to each of the following data issues:

(i) Schedule P reconciliation

(ii) A&E claims data

(iii) S&S reporting in the Annual Statement

Your response should reference the following sources if applicable:

- Actuarial Standards of Practice (ASOPs)
- Statements of Statutory Accounting Principles (SSAPs)
- Additional guidance on SAOs
  - NAIC SAO Instructions
  - Academy Public Policy Practice Note: Statements of Actuarial Opinion on Property and Casualty Loss Reserves Developed by The Casualty Practice Council's Committee on Property and Liability Financial Reporting (Practice Note)

ANSWER:

GIFREU, Spring 2022, Q17

(*5 points*) Actuarial Standard of Practice (ASOP) 43 identifies a problem with using the term "best estimate" for an actuarial estimate of unpaid claims.

(a) (*0.5 points*) Describe this problem.

ANSWER:

You are the Appointed Actuary (AA) for a U.S. general insurance company (the Company). You have implemented a new method in your actuarial estimation process based on the current environment which includes material COVID-related claims. You believe the new method is more appropriate.

Amounts in $ millions	**Old Method**	**New Method**
Actuarial central estimate for unpaid claims	145	155
Actuarial range of reasonable estimates	140-150	150-160

- Management is booking reserves of $145 million based on the old method.
- The Company's statutory surplus is $50 million.
- The Company's net income for the year is $10 million.

(b) (*0.5 points*) Select the type of Statement of Actuarial Opinion (SAO) you would render for the Company in this scenario. Justify your selection.

ANSWER:

(c) (*1 point*) Describe two disclosures you would include in your SAO in this scenario.

ANSWER:

(d) (*1 point*) Draft a Relevant Comments paragraph to address the RMAD in this scenario.

ANSWER:

The carried reserves result in a one-year loss development in excess of 5% of surplus in at least three of the past five calendar years.

(e) (*0.5 points*) Describe the SAO reporting required of the AA in this scenario.

ANSWER:

(f) (*0.5 points*) Describe the Annual Statement reporting required of the Company in this scenario.

ANSWER:

Six months after issuance of all actuarial documentation, an examination by the department of insurance noted an error in the Company's paid losses as reported in Schedule P of the Annual Statement.

(g) (*1 point*) Describe what is required of the AA after being informed of the error.

ANSWER:

GIFREU, Fall 2022, Q7

(*6 points*) The Appointed Actuary (AA) for a U.S. general insurance company (the Company) is an employee of the Company and fully qualified to sign the Statement of Actuarial Opinion (SAO). The AA has extensive knowledge of the Company's book of business.

The external auditor for the Company makes use of a consulting actuary to provide an independent analysis for an estimate of the claim liabilities. The auditor's consultant has a great deal of industry experience and knowledge and is fully qualified to sign the SAO.

The Company booked reserves in the amount of $355 million. The AA developed a central estimate for the SAO while the auditor's consultant developed a reasonable range of reserves for the Company. The results are as follows:

Amounts (in $ millions)	**Low end of reasonable range**	**Central Estimate**	**High end of reasonable range**
AA's estimate	xxx	350	xxx
Consultant's estimate	380	390	400

The AA and the auditor's consultant have compared the analyses supporting their estimates and have determined that the difference is due to a single line of business, personal automobile (PAuto). The source of this difference is that recent legislation was expected to increase the cost of all open claims for PAuto. Historically, PAuto claim liabilities have been about one third of the total claim liabilities for the Company.

Independent studies were done by two actuarial consulting firms to quantify the effect of this legislation. Each study arrived at different results due to ambiguities in the legislation that have not yet been clarified. One study estimated a 9% increase due to the legislation, while the other study estimated a 30% increase due to the legislation. For the estimation of the Company's reserves, the AA used the study with the 9% increase while the auditor's consultant used the study with the 30% increase.

While the AA has not disclosed a range, the AA used a ± 3.5% range of reasonability in prior years. For this SAO, the AA used a ± 10% range of reasonability due to the additional uncertainty arising from the recent legislation affecting all open claims.

(a) (*0.5 points*) Select the type of SAO the AA should render in this situation. Justify your selection.

ANSWER:

(b) (*0.5 points*) Describe how Actuarial Standard of Practice (ASOP) 21 (*Responding to or Assisting Auditors or Examiners in Connection with Financial Audits, Financial Review, and Financial Examinations)* provides guidance in resolving this situation.

ANSWER:

(c) (*5 points*) Outline how the AA should proceed in this situation.

ANSWER:

GIFREU, Fall 2022, Q12

(*5 points*) Actuarial Standard of Practice (ASOP) No. 38, *Catastrophe Modeling*, notes that the actuary should understand and evaluate the catastrophe model when selecting, using or reviewing the model.

(a) (*1 point*) Describe the level of effort that should be undertaken by the actuary in understanding and evaluating the model.

ANSWER:

In making use of a catastrophe model developed by an expert, ASOP No. 38 requires that the actuary should take into account several items.

(b) (*1.5 points*) Describe three items that the actuary should take into account when using a model developed by an expert.

ANSWER:

ASOP No. 38 requires the actuary to understand the user input for the catastrophe model.

(c) (*1 point*) Describe what this requirement entails.

ANSWER:

ASOP No. 38 requires the actuary to validate that the output reasonably represents that which is being modeled.

(d) (*1.5 points*) Describe three potential ways to validate the model output.

ANSWER:

GIFREU, Fall 2022, Q17

Note: This item also applies to Leaning Objective 3.
Part (a) is not on GI 302.

~~(*5 points*) The International Actuarial Association (IAA) has defined five key areas where active actuarial participation can be valuable in prudential supervision.~~

~~(a) (*1 point*) Identify four of these areas.~~

~~ANSWER:~~

According to the textbook *General Insurance Financial Reporting Topics*, U.S. insurance regulators are interested in four attributes for booked reserves: *sufficiency, unbiasedness, soundness and reasonability*.

(b) (*1.5 points*) Describe three of the four attributes:

ANSWER:

The NAIC Instructions for the Statement of Actuarial Opinion (SAO) define five opinion categories, the most common of which is a reasonable provision.

(c) (*2 points*) Define each of the other four categories.

ANSWER:

U.S. statutory accounting includes rules on the reporting of retroactive reinsurance in the Annual Statement.

(d) (*0.5 points*) Describe the reporting of *assumed* retroactive reinsurance in the Annual Statement with respect to the following:

(i) Liabilities

(ii) Surplus

ANSWER:

GIFREU, Spring 2023, Q6

(*4 points*) A U.S.-based general insurance company that writes both property and liability lines of business has hired a consultant to act as the appointed actuary (AA). The insurer's CFO provided the data to support the AA's Statement of Actuarial Opinion.

- The AA's reserve analysis using the data provided indicated that the insurer's booked reserves were reasonable.
- The AA had some questions regarding the data provided. The loss data appeared reasonable but had some inconsistencies with Schedule P Part 1 loss data.
- The CFO said that there was insufficient time to address the AA's questions regarding the data. The CFO said that the data was reviewed by the finance department, and that it was valid.

Outline how the AA should proceed in this situation.

ANSWER:

GIFREU, Spring 2023, Q8

The case study for this question is at
https://www.soa.org/48ef45/globalassets/assets/files/edu/2023/spring/study-note/gifreu-2023-spring-case-study.pdf

(*4 points*) The auditor for R-Dan produced an independent actuarial analysis of R-Dan's loss and loss adjustment expense (Loss & LAE) reserves as of December 31, 2022.

The results of the auditing actuary's analysis were as follows:

Analysis of Loss & LAE Reserves ($000) as of Dec. 31, 2022						
	Net			**Gross**		
Line of Business	**Point Estimate**	**Low End of Range**	**High end of Range**	**Point Estimate**	**Low End of Range**	**High end of Range**
Homeowners Multiple Peril	48,000			77,600		
Total Automobile Liability		252,300	285,700		258,500	292,200
All Other Lines	5,500			6,000		

- The auditing actuary selected 5% of statutory surplus as the materiality standard.
- Assume that the mid-point of the range of reserves is the most likely outcome.

(a) (*1 point*) Select the Category of Opinion that would result if the auditing actuary had issued the Statement of Actuarial Opinion (SAO) based on their own analysis. Justify your selection.

Provide the response for this part in the Excel spreadsheet.

(b) (*3 points*) Compose the following using the results from the auditing actuary's analysis:

(i) SAO Relevant Comments with respect to the Risk of Material Adverse Deviation

(ii) Actuarial Opinion Summary (AOS) sections A to D

Provide the response for this part in the Excel spreadsheet.

GIFREU, Spring 2023, Q14

(*4 points*) The appointed actuary (AA) for a U.S.-based general insurer is required to report annually to the insurer's Board.

(a) (*1 point*) Describe what the AA is required to provide to the Board.

ANSWER:

The AA is required to comment on any persistent adverse development in the Actuarial Opinion Summary (AOS).

(b) (*1 point*) Provide two questions the AA should address in their AOS commentary related to persistent adverse development.

ANSWER:

PQR Insurance writes only automobile insurance. Two of the three IRIS ratio reserve tests were outside the normal range for PQR in 2022. The AA preparing the Statement of Actuarial Opinion (SAO) for PQR as of December 31, 2022 noted the following:

I. There has been persistent general inflation affecting losses.

II. A legal ruling on January 15, 2022 mandated that automobile repairs covered by insurance must use original equipment manufacturer (OEM) replacement parts and not less expensive after-market replacement parts. This ruling applies to all automobile insurance physical damage claims that were incurred after December 31, 2021. It affected all insurers that wrote automobile insurance.

III. PQR strengthened reserves over the past year in addition to the increases due to the unfavorable legal ruling.

(c) (*2 points*) Outline what is expected from the AA with respect to PQR's SAO given the above scenario.

ANSWER:

GIFREU, Fall 2023, Q4

(*6 points*) According to the NAIC Statement of Actuarial Opinion (SAO) Instructions, the Appointed Actuary (AA) "shall provide to the Board of Directors qualification documentation on occasion of their appointment, and on an annual basis thereafter, directly or through Company management."

(a) (*1.5 points*) Describe what is to be included in this documentation.

ANSWER:

NAIC SAO Instructions require a formal process when the Board of an insurer replaces an AA. This process requires the insurer to send three letters.

(b) (*3 points*) Provide the following for each of these three required letters (which you may refer to as the first, second and third letters).

(i) Purpose of each letter

(ii) Receiver of each letter

(iii) Timing of each letter

ANSWER:

NAIC SAO Instructions require that two types of Schedule P data checks be performed. They are the Schedule P reconciliation performed by the AA and annual testing performed by the independent auditor.

(c) (*1.5 points*) Compare the purpose of these two Schedule P data checks.

ANSWER:

GIFREU, Fall 2023, Q10

NOTE: This item also applies to Learning Objective 3.

The case study for this question is at https://www.soa.org/4a7b7f/globalassets/assets/files/edu/2023/fall/case-study/gifreu-case-study.pdf

Provide the response for this question in the Excel spreadsheet.

NOTE: This item also relates to Learning Objective 3.

(*7 points*) According to Actuarial Opinion Working Group (AOWG) Regulatory Guidance, the materiality standard and RMAD conclusion disclosed in SAO Exhibit B line 6 should pertain to net reserves.

(a) (*2 points*) Explain how an Appointed Actuary could determine and present the SAO RMAD conclusion pertaining to gross reserves (direct plus assumed reserves).

Sue Calvin selected the minimum of 7.5% of statutory surplus, and 5% of net loss and loss adjustment expense reserves as the materiality standard regarding the risk of material adverse deviation (RMAD) in R-Dan's Statement of Actuarial Opinion (SAO). This resulted in a materiality standard of $14.5 million.

The external auditor for R-Dan selected a materiality threshold of 5% of net premium earned for their audit of R-Dan's financials. R-Dan's CFO recommended that Sue Calvin's materiality standard should have been made equal to that selected by the external auditor.

(b) (*1.5 points*) Critique the CFO's recommendation.

(c) (*1.5 points*) Describe potential ramifications for R-Dan's SAO (current and future) if Sue Calvin had selected 5% of net premium earned as the materiality standard regarding RMAD.

A member of R-Dan's senior management team stated that the materiality standard regarding RMAD should have been set at the minimum amount of adverse deviation that would cause R-Dan to fail NAIC IRIS test 11 (1-year reserve development to PHS).

(d) (*0.5 points*) Determine this materiality standard.

(e) (*1.5 points*) Critique the materiality standard determined in part (d).

GIFREU, Spring 2024, Q4

(*4 points*)

(a) (*1 point*) Describe the concept of materiality regarding actuarial work.

ANSWER:

(b) (*1 point*) Explain why the selection of a materiality standard for an actuarial opinion should or should not be influenced by how close an insurer is to the minimum capital requirement.

ANSWER:

(c) (*1 point*) Explain why the selection of a materiality standard for an actuarial opinion should or should not be influenced by the degree of uncertainty in the provision for insurance liabilities.

ANSWER:

You are responsible for opining on the reserves for an insurer and discover an error in the calculation in one of the development factors.

(d) (*1 point*) Describe two considerations that could influence if this error is material.

ANSWER:

GIFREU, Spring 2024, Q10

The case study for this question is at
https://www.soa.org/48f9b0/globalassets/assets/files/edu/2024/spring/case-study/gifreu-case-study.pdf

(*5 points*) Sue Calvin did not include a review date in R-Dan's Statement of Actuarial Opinion (SAO). The NAIC Actuarial Opinion Working Group Regulatory Guidance states that the absence of a review date disclosure in the SAO can indicate one of two possibilities.

(a) (*0.5 points*) Identify these two possibilities.

ANSWER:

R-Dan's Actuarial Report included an exhibit that revealed the following differences between the actuarial data used in the report and the information in Schedule P Part 1.

Actuarial Data minus Schedule P Part 1 Data (in $ millions)						
Line of Business	**Earned Premium during Calendar Year 2023**		**Paid Losses & DCC during Calendar Year 2023**		**Reserves for Unpaid Loss & DCC as of Year End 2023**	
	Gross	**Net**	**Gross**	**Net**	**Gross**	**Net**
Homeowners/Farmowners	+0.2	+0.1	+0.4	+0.4	+0.1	+0.1
Private Passenger Liability/Medical	+15.1	+15.1	+0.6	+0.6	+0.5	+0.5
Commercial Auto	0.0	0.0	0.0	0.0	0.0	0.0
Special Property	0.0	0.0	0.0	0.0	0.0	0.0
Auto Physical Damage	−15.0	−15.0	−0.6	−0.6	−0.4	−0.4
Total	+0.3	+0.2	+0.4	+0.4	+0.2	+0.2

The Scope section of the SAO is required to include a statement regarding the reconciliation of data used by the actuary in the reserve analysis to the corresponding data in the company's Schedule P.

(b) (*1.5 points*) Draft a disclosure for the Schedule P reconciliation that should meet regulatory standards.

ANSWER:

The disclosure on reinsurance in the Relevant Comments section in the SAO may not meet regulatory standards.

(c) (*1.5 points*) Explain what should be added to the disclosure on reinsurance in order to meet regulatory standards.

ANSWER:

The disclosure on the risk of material adverse deviation (RMAD) in the Relevant Comments section in the SAO included several risks that R-Dan is exposed to. However, R-Dan may be exposed to additional risks, including the following:

I. A recent appellate court decision relaxed the burden of proof for plaintiffs in cases of bad faith against insurers.

II. R-Dan increased its use of external claim adjusters to handle business growth.

III. There was persistent general inflation over the past two and a half years, that is significantly higher than that experienced historically.

IV. There were significant increases to several mandatory automobile personal accident no-fault benefits that were implemented in Michigan over the past year. There is the potential for additional significant increases over the next few years.

(d) (*1 point*) Determine which of risks I through IV should be included in the RMAD disclosure. Justify your determination.

ANSWER:

R-Dan's Actuarial Report includes an exhibit summarizing the change in the Appointed Actuary's estimates (on page 37 of the Case Study). For accident years 2014 to 2023, the total current amount from this exhibit differs from the total current amount from Schedule P – Part 2 – Summary.

(e) (*0.5 points*) Explain the reason for this difference.

ANSWER:

GIFREU, Fall 2024, Q3

(*6 points*) The Appointed Actuary (AA) of a U.S.-based insurer, QRS Insurance, provides a P&C Statement of Actuarial Opinion (SAO).

There are five possible types of SAOs. The most common type of SAO is *reasonable*.

(a) (*2 points*) Describe the four other types of SAOs.

ANSWER:

You are given the following information:

- The AA's materiality standard for QRS is 10 million.
- The AA's estimated reasonable range of reserves is 225 million to 275 million.
- The AA's range excludes amounts from a voluntary pool (Pool X) in which QRS participates.
- QRS has a 5% share in this voluntary pool.
- Pool X carries reserves of 950 million.
- The SAO for Pool X is signed by an independent qualified actuary and is categorized as "reasonable".
- The Pool X Actuarial Opinion Summary (AOS) and Actuarial Report were not made available to the QRS AA before the QRS SAO was to be issued.
- The QRS AA does not have the time to perform an independent quantitative analysis on Pool X's reserves before issuing the SAO.
- The QRS Annual Statement reports reserves of 270 million. These reported reserves include a provision for its share of Pool X carried reserves.

(b) (*2.5 points*) Select three types of SAOs that could be provided for QRS with the information available. Justify each type selected.

ANSWER:

(c) (*1.5 points*) Select a type of SAO from part (b) that is the most appropriate for QRS in this scenario. Justify your selection.

ANSWER:

GIFREU, Fall 2024, Q13

(*5 points*)

(a) (*1 point*) Compare the use of internal appointed actuaries (AAs) versus external AAs with respect to independence.

ANSWER:

The actuarial report supporting the AA's statement of actuarial opinion (SAO) has both primary and secondary intended users.

(b) (*1 point*) Identify two each for the following:

(i) Primary intended users

(ii) Secondary intended users

ANSWER:

In the United States, premium reserves are generally outside the scope of the AA's SAO. However, they are within the scope of the AA's SAO for long-duration contracts.

(c) (*1 point*) State the two conditions for a contract to be categorized as a long-duration contract.

ANSWER:

If the AA issues a qualified SAO for a U.S general insurer, four disclosures specific to a qualified opinion are required.

(d) (*2 points*) Describe these four required disclosures.

ANSWER: