GI Sample CBT Questions and Solutions

NOTE: The solutions presented here are not the full model solutions as published. There is no commentary and where there is more than one correct response, only one such response is presented.

GIRR Sample CBT Question

(*6 points*) You are estimating unpaid claims using the expected method.

There are two approaches for adjusting historical premiums to current rate levels.

(a) (*0.5 points*) Provide an advantage and a disadvantage of the extension of exposures approach.

> ANSWER:

(b) (*0.5 points*) Provide an advantage and a disadvantage of the parallelogram approach.

> ANSWER:

You are given the following information:

Accident Year	Earned Premiums (000)	Rate Change % in Year	Paid Claims as of Dec. 31, 2018 (000)	Cumulative Development Factors
2016	76,000	5%	54,000	1.20
2017	75,000	0%	45,000	1.40
2018	80,000	3%	38,000	1.70

- The rate changes are effective on July 1 each year in 2016 and 2018.
- All policies are written for 12-month policy terms.
- Tort reform reduced claim costs by 10% for all accidents occurring on or after July 1, 2017.
- The annual claim trend is 3%.

(c) (*2 points*) Calculate premium on-level factors for accident years 2016-2018 to use for projecting ultimate claim ratios as of December 31, 2018.

> *The response for part (c) is to be provided in the Excel spreadsheet.*

(d)　　(*2 points*) Calculate the 2018 level expected claim ratio, using a simple average of all accident years.

> *The response for part (d) is to be provided in the Excel spreadsheet.*

(e)　　(*1 point*) Calculate the unpaid claims for accident year 2017 as of December 31, 2018 using the expected method.

> *The response for part (e) is to be provided in the Excel spreadsheet.*

GI Sample CBT Questions

GIRR Sample Solution – Parts Answered in Word

(a)   (*0.5 points*) Provide an advantage and a disadvantage of the extension of exposures approach.

> ANSWER:
> Advantage: this is the most precise method, with every policy re-rated at current values using the current rating factors.
>
> Disadvantage: this method is not viable if new rating variables have been introduced for which historical data are not available.

(b)   (*0.5 points*) Provide an advantage and a disadvantage of the parallelogram approach.

> ANSWER:
> Advantage: this method is simple to apply.
>
> Disadvantage: this method assumes exposures are uniformly distributed over time.

GI Sample CBT Questions

GIFREU Sample CBT Question

Case Study question

(*3 points*) You are given the following information (amounts in thousands) for R-Dan General Insurance Company's (R-Dan's) NAIC RBC calculation as of December 31, 2018:

NAIC RBC Risk Charge	Amount (in thousands)
R_0 charge	60
R_1 charge	8,820
R_3 charge	2,210
R_4 charge	36,200
R_5 charge	53,110

Basis	Value at Risk (VaR) for Risk Level	Catastrophe		
		Earthquake (EQ)	Hurricane (HUR)	Wildfire (WF)
Gross of Reinsurance	87.5%	0	15,000	4,000
	99%	3,000	25,000	6,000
	99.5%	40,000	50,000	8,000
Net of Reinsurance	87.5%	0	12,000	4,000
	99%	2,000	20,000	6,500
	99.5%	30,000	35,000	7,000

Calculate R-Dan's NAIC RBC as of December 31, 2018.

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

Note: Because the entire solution is in Excel, the Word version of the solution will just be the question and so is not shown here.

GIADV Sample CBT Question

(*4 points*) You are calculating the underwriting profit margin for a one-year policy using the Risk Adjusted Discount Technique with the following assumptions:

- The premium will be collected at policy inception.
- Expenses of 25 will be paid at policy inception.
- Losses are expected to be 125 and will be paid at policy expiration.
- The tax rate on all income is 35% and taxes will be paid at policy expiration.
- Equity of 100 supports the policy.
- The risk-free rate is 3%.
- The risk-adjusted rate for losses is –1%.

(a) (*2.5 points*) Calculate the premium for this policy.

> *The response for part (a) is to be provided in the Excel document.*

(b) (*0.5 points*) Calculate the underwriting profit margin for this policy.

> *The response for part (b) is to be provided in the Excel document.*

(c) (*1 point*) State two drawbacks of the Risk Adjusted Discount Technique.

> ANSWER:

GIADV Sample Solution – Part Answered in Word

(c) (*1 point*) State two drawbacks of the Risk Adjusted Discount Technique.

> ANSWER:
> There is no accepted approach for setting the risk adjusted discount rate.
>
> It is difficult to allocate equity to policies.