GH FVA Model Solutions
Spring 2021

1.

Learning Objectives:
1. The candidate will understand and apply valuation principles for insurance contracts.

Learning Outcomes:
(1a) Describe the types of claim reserves (e.g., due and unpaid, ICOS, IBNR, LAE, PVANYD).

(1b) Explain the limitations and biases of the traditional valuation methods.

(1c) Calculate appropriate claim reserves given data.

(1f) Describe, calculate and evaluate non-claim reserves and explain when each is required

Sources:
Bluhm – Individual Health Insurance 2nd Ed Ch 6

Commentary on Question:
The question was testing the candidates' knowledge of types of US based reserves and reserve basis. Parts (a) and (b) were list and describe questions and Part (c) was a calculation / application question.

Generally the question was completed well.

Solution:
(a) List and describe the types of insurer financial statements that use different reserve bases.

Commentary on Question:
Most responses were able to get two to three of the four insurer financial statements correct. Answers for Stat and GAAP were generally better and more complete than Tax and EV. Some people thought the question was asking about definitions of the balance sheet and income statement.

Statutory Statement
- Focus on ensuring solvency of insurer
- Tend to be more conservative than other statement basis

1. **Continued**

General Acceptable Accounting Principle (GAAP) statements
- Developed under the standards set out by the Financial Accounting Standards Board (FASB)
- Focuses on matching profit streams with revenue streams
- GAAP statements are not as conservative as statutory statements

Tax Statements
- In the U.S., the IRS requires that financial statements follow a set of standards designed to make sure profits beyond a set level are recognized and tax immediately
- Least conservative (lower reserves generates higher income and more taxes)

Embedded value based statements
- For companies who operate internationally
- Similar to GAAP in conservatism, EV calculation uses best estimate assumptions

(b)   List and describe the types of premium reserves.

Commentary on Question:
Most answers were well done identifying the UPR, Paid in Advance, and Due and Unpaid

Unearned premium reserves (UPR)
- Reserve that sets aside the part of premium that has been received for coverage which has not yet occurred as of the valuation date
- Gross UPR is calculated as the pro-rated portion of the actual gross premium received; this is most common

Premium Paid in Advance: A premium paid in advance reserve is held when a policyholder pays more premium than is strictly required for the current renewal period.

Premium Due and Unpaid: Held when premium payments are owed by the valuation date but have not been received.

(c)   Calculate each type of premium reserve that should be held as of 12/31/2020 for each policy. Show your work.

Commentary on Question:
This part was least well answered – there was much confusion on UPR vs Paid in Advance. Many used the UPR reserve in #001 and #002 instead of Paid-in-Advance.   Typically Candidates who were able to provide a good definition the reserves in Part B did better in Part C. Providing description of assumptions helped candidates who did not have the right answer get partial credits.

1. **Continued**

POLICY #001
Modal premium is due on 1/1/2021. Thus, the monthly premium is not yet due. The monthly premium is $200 (= 2,400/12) Paid in advance reserve of $200

POLICY #002,
Modal premium is $2,000 Because the policy isn't inforce at 12/31/2020, the full amount as a premium paid in advance reserve.

POLICY #003
Modal premium is $2,000 (=$4,000 / 2). The Oct 2020 – Mar 2021 modal premium has been paid and was already owed ½ of it ($1000) is for a period after the valuation date so is held as a Gross UPR. The Apr 2021 – Sep 2021 modal premium of $2,000 has been paid in advance and is held as a Premium Paid in Advance reserve

POLICY #004,
Modal premium is $2400. This premium was NOT paid on time and thus the full amount is listed as a due and unpaid premium ($2,400). 10 months of the premium owed is for a period after the valuation date and thus 10/12 of the premium ($2000) is unearned.

2. **Learning Objectives:**
1. The candidate will understand and apply valuation principles for insurance contracts.

Learning Outcomes:
(1c) Calculate appropriate claim reserves given data.

(1e) Evaluate data resources and appropriateness for calculating reserves.

Sources:
CIA Educational Note - Valuation of Group Life and Health Policy Liabilities

Commentary on Question:
The focus of the entire question was on the material from the CIA Educational Note – Valuation of Group Life and Health Policy Liabilities. Questions were based on different sections which tested the candidates understanding of valuation challenges, experience rating refunds, and reserve adequacy.

Solution:
(a) Describe challenges you may face in the valuation of Northern Insurance Company's group and health business.

Commentary on Question:
Many candidates were able to recall many of the list items below and provide a one or two line description.

The list below includes all of the acceptable points, however candidates only had to provide the text in bold and one of the subpoints to achieve full credit. Listing just the items in bold without any description was not sufficient.

- **Different lines of business**
    - Group insurance encompasses employer group, association, creditor and special risk
    - Contract features, underwriting and claims experience, reporting systems, compensation and other expenses, benefit provisions and reinsurance will usually differ among these different lines.
- **Benefit Variety**
    - There is a wide variety of benefits and financial arrangements.
    - There is a wide variety of benefit types, contract provisions and rating practices.
- **Customization**
    - For groups beyond a certain size, contracts are usually the result of negotiation and thus involve customization to meet the client's specific needs.
    - This customization creates additional complexity in the valuation.

2. **Continued**

- **Third party administrators**
    - TPAs are common and their record-keeping and administration practices do not always meet the actuary's needs.
- **Refund Accounting**
    - Large groups are commonly subject to refund accounting, which adds an additional degree of complexity to the valuation work.
    - Because the actuary's valuation is prospective in nature, the liability for future experience rating refunds reflects the refund accounting rules or bases, and may not be simply equal to the group's surplus at the valuation date.
- **Data**
    - Reliable and consistent experience data are often scarce. There are often data issues affecting the valuation of group life and health plans.
- **Liability Term Length Results in Individual (Seriatim) Reserving**
    - While group contracts are traditionally of a short-term nature, the term of the liability for some of these coverages ("group business that behaves like individual business") would be determined on a seriatim basis and related to the ages or lifetimes of the individual participants, similar to individual insurance.
    - Group administration practices apply even to groups that, for valuation purposes, behave like individual business. As a result, policy data and valuation systems may not be readily available for the actuary's valuation purposes. Moreover, while the seriatim valuation basis of the future claims liability is well accepted for some coverage (e.g., paid-up life and creditor insurance), it is not common practice for others like association group business.
    - If refund accounting applies in such cases, the refund accounting rules may not include a future claim liability of this nature. This may complicate the actuary's valuation of the liability for future experience rating refunds.

Employer A has an experience rating refund (ERR) provision in its contract. The future experience of Employer A through the end of its rate guarantee period is projected as follows:

- Premium: $1,000,000
- Expense Premium: $300,000
- Profit Charges: $10,000
- Policy Holder Liabilities on New Claims: $600,000
- Interest Credited: $10,000
- Interest Required on Existing Policyholder Liabilities: $15,000
- Policyholder Margin on Existing Claim Liabilities: $3,000
- Policyholder Margin on New Claim Liabilities: $6,000

2. **Continued**

- Policyholder Valuation Expense: $10,000
- Claims Administration Charges: $20,000
- Discount Rate: 0%

(b) Calculate the future ERR liability for Employer A. Show your work. Describe potential concerns regarding your use of this data.

Commentary on Question:
Candidates found this question challenging and missed key components of the formula or applied components incorrectly.

Credit was given to candidates who described the formula that they were using and then for the calculation that was performed.

The future experience rating refund (ERR) liability is calculated by summing the present value of the following:

- Margins (over the term of the claim liability) from the benefit cash flow difference between the policyholder and statutory liabilities (the "policyholder margin") on existing claims and future claims incurred before the end of the rate guarantee period
- Guaranteed interest credited less interest required on the policyholder liabilities to the end of the interest guarantee period
- Policyholder valuation expense less claims administration charges
- Differences between premiums and expected policyholder charges for retention (excluding risk charge) and claims (using policyholder liability bases) to the end of the premium rate guarantee period.

Future ERR Liability = PV(ERR) = ERR since discount rate is 0%

= Policyholder Margin on Existing Claim Liabilities
+ Policyholder Margin on New Claim Liabilities
+ Interest Credited
– Interest Required on Existing Policyholder Liabilities
+ Policyholder Valuation Expense
– Claims Admin Charges
+ Premium
– Expense Premium
– Profit Charges
– Policyholder Liabilities on New Claims

= $3,000 + $6,000 + $10,000 - $15,000 + $10,000 - $20,000 + $1,000,000 - $300,000 - $10,000 - $600,000 = **$84,000**

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2. Continued

Employer B has been a policyholder for several years. You are given the following information on Employer B's claim reserve development during 2020. Amounts are in thousands of dollars.

Claim Duration	Reserve at 1 Jan 2020	Actual Claim Payments	Valuation Interest Amount	Reserve at 31 Dec 2020
5+	300	50	10.0	260
4	140	25	4.6	130
3	180	20	6.4	160
2	230	50	7.2	190
1	300	65	9.4	240

(c)   Evaluate the adequacy of the claim reserves:

(i)   For each individual claim duration. Show your work and justify your answer.

(ii)   For the lifetime of the policy. Show your work and justify your answer.

Commentary on Question:
Candidates did very well with this question. Many were able to articulate the formula correctly and calculate the gains and losses of each duration and then calculate the sum of the gains and losses to understand the reserve adequacy over the lifetime of the policy.

The gain/loss for each claim duration and the total overall needs to be calculated.

Gain (loss)= Reserve at 1/1 – Reserve at 12/31 – claim payments + valuation interest

Claim Duration	Reserve at 1 Jan 2020	Actual Claim Payments	Valuation Interest	Reserve at 31 Dec 2020	2020 Gain (loss)
5+	300	50	10.0	260	0.0
4	140	25	4.6	130	-10.4
3	180	20	6.4	160	6.4
2	230	50	7.2	190	-2.8
1	$300	65	9.4	240	4.4

2020 total gain for the Lifetime of the Policy = 0 – 10,400 + 6,400 – 2,800 + 4,400 = -$2,400

2. **Continued**

(i) **As long as the gain is equal to or greater than zero, the reserve is adequate.** Therefore, the reserve was adequate for durations 1, 3 and 5 but not adequate for durations 2 and 4 as determined by the losses during those durations.

(ii) The reserve was not adequate for the lifetime of the policy as determined by the $2,400 loss overall.**The overall gain (loss) is the sum of the individual gains and losses.**

3. **Learning Objectives:**
1. The candidate will understand and apply valuation principles for insurance contracts.

Learning Outcomes:
(1c) Calculate appropriate claim reserves given data.

(1g) Apply applicable standards of practice related to reserving.

Sources:
Group Insurance, Skwire, Daniel D. Chapter 38: Claim Reserves for Long-Term Benefits

ASOP 5: Incurred Health and Disability Claims

Commentary on Question:
In general, this question was poorly answered. No candidate was able to achieve full marks on this question.

Solution:
(a) List and describe key considerations for estimating health and disability claims in accordance with ASOP 5.

Commentary on Question:
Most candidates were able to list some items, and many were able to list them all.

Health Benefit Plan Provisions and Business Practices
The actuary should consider the health benefit plan provisions and related business practices, including special group contract holder requirements and provider arrangements, which in the actuary's judgment may materially affect the cost, frequency, and severity of claims.

Economic and Other External Influences
The actuary should consider items such as changes in price levels, unemployment levels, medical practice, managed care contracts, cost shifting, provider fee schedule changes, medical procedures, epidemics or catastrophic events, and elective claims processed in recessionary periods or prior to contract termination.

Behavior of Claimants
The actuary should consider reasonably available information regarding claimant behavior, such as pent-up demand for new benefits, or impending benefit changes, which may impact incurred claims.

3. Continued

Organizational Claims Administration
The actuary should consider items that may affect claims administration practices, such as staffing levels, variable claim processing and investigation time, computer system changes or downtime, seasonal backlogs of claims submitted, increased electronic submission of claims by providers, governmental influences, and cash flow considerations.

Claim Seasonality
The actuary should understand how seasonality may impact the estimation of incurred claims and make appropriate adjustments.

Credibility
The actuary should consider how the credibility of the data affects the development of incurred claim estimates and refer to ASOP No. 25, Credibility Procedures, for further guidance.

Risk Characteristics and Organizational Practices by Block of Business
The actuary should consider how marketing, underwriting, and other business practices can influence the types of risks accepted, and how the pattern of growth or contraction and relative maturity of a block of business can influence incurred claims.

Legislative Requirements
The actuary should consider relevant legislative and regulatory changes as they pertain to the estimation of incurred claims.

Carve-Outs
The actuary should consider the pertinent benefits, payment arrangements, and separate reporting of those benefits subject to carve-outs in incurred claims estimates.

Special Considerations for Long-Term Products
The actuary should consider the variety of benefits available in long-term products, such as lump-sum, fixed, or variable payments for services.

(b) Calculate the fixed percentage of salary that will be offered as a benefit based on your manager's request. Show your work.

Commentary on Question:
Part b) contained a mix of answers: either candidates understood the concept and got many points, or they did not and got very few points. Only a handful of candidates understood that maximum reserve would be at time 3, just at the beginning of LTD payments and after they have completed the elimination period.

3. **Continued**

Desc	50 yo	60 yo	Total

Salary:	$72 000	$96 000	
Monthly benefit	$6 000	$8 000	

Coefficient Calculation			
t=3:	$6 000	$8 000	
t=4:	$5 629	$7 804	
t=5:	$5 260	$7 610	
V3	$16 888	$23 414	$40 302

		Probability	
Discount	50 yo	60 yo	
1,000	1,000	1,000	
0,997	0,941	0,979	
0,993	0,882	0,957	

Max reserve:		$30 000
Formula :		74,4%

Calculation example at t=5 for a 50-year-old:

= $6,000 x 0.993 x 0.882
= $5,260

Final answer: 74.4%

4.   **Learning Objectives:**
1.   The candidate will understand and apply valuation principles for insurance contracts.

Learning Outcomes:
(1c)   Calculate appropriate claim reserves given data.

(1e)   Evaluate data resources and appropriateness for calculating reserves.

(1g)   Apply applicable standards of practice related to reserving.

Sources:
Skwire Chapter 38

Commentary on Question:
Commentary listed underneath question component.

Solution:
(a)
    (i)   List and describe common policy provisions that should be considered in LTD claim reserving.

    (ii)   Explain how each of the policy provisions listed in part (i) may impact the reserve calculation for LTD benefits.

    Commentary on Question:
    *For part (i), the question said 'list and describe'. Some candidates didn't describe the provisions they listed. For part (ii), some candidates did not state **how** the reserve is impacted. Candidates needed to state that the reserve increased or decreased, based on the corresponding provision.*

    (i)
- Cost of Living Adjustments (COLA) – COLA benefits increase the amount of claim payments for inflation.
- Partial and Residual Benefits – Benefits are paid at less than 100% of the monthly benefit if the claimant is able to work part-time during a period of disability.
- Survivor Benefits – Death benefit payment is paid to a beneficiary if the claimant dies while receiving benefits.
- Benefit Integration – Many LTD plans are integrated with benefits for social insurance or other benefits while on disability.
- Benefit limitations or exclusions – Many LTD benefits have a limited benefit period, such as two years, for some specified conditions.
- Waiver of Premiums – Some LTD benefits contain a provision that waives premiums if the insured is on claim or if a person's spouse has passed away.

4. Continued

(b) Calculate the probability that Mary will still be an active claimant in one year. Show your work.

Commentary on Question:
Some candidates used the wrong exhibit for claim reserve factors while others didn't realize that looking at a duration 60 reserve would mean that the age of the claimant would then be 36. Other candidates ignored the given reserves, and instead tried to calculate reserves from scratch.

Identify reserve factors to use from exhibit 4 ($1 benefit)
F(35, 48): 136.00
F(36,60): 135.35

Scale the factors to Mary's benefit
F(35, 48): 136.00 x $3,000 = $408,000.00
F(36,60): 135.35 x $3,000 = $406,050.00

$$V_n = \sum_{t=n}^{BP} Benefit_t \cdot Continuance_t \cdot InterestDiscount_t$$

Set up formula relating the factors:
Age 35/48 factor = PV next 12 monthly payments + Age 36/60 factor x continuance x discounting

$408,000.00 = $34,465 + $406,050.00 x continuance x discounting (1/1.05)
Continuance = 96.59%

5. **Learning Objectives:**
1. The candidate will understand and apply valuation principles for insurance contracts.

Learning Outcomes:
(1a) Describe the types of claim reserves (e.g., due and unpaid, ICOS, IBNR, LAE, PVANYD).

(1b) Explain the limitations and biases of the traditional valuation methods.

(1c) Calculate appropriate claim reserves given data.

(1d) Reflect environmental factors in reserve calculations (trend, seasonality, claims processing changes, etc.).

(1e) Evaluate data resources and appropriateness for calculating reserves.

(1g) Apply applicable standards of practice related to reserving.

Sources:
Group Insurance (Skwire), Chapter 37; GHFV-103-16: Health Reserves

Commentary on Question:
This question tested the candidates' knowledge of how to calculation completion factors and incurred but not paid (IBNP) reserves. Most candidates did well on the calculations required for parts (a) and (b). Part (c) required candidates to analyze data and to provide relevant questions to investigate.

Solution:
(a) Recommend completion factors for use in reserving. Show your work.

Commentary on Question:
Most candidates did well on this part, a straightforward calculation of completion factors. To receive full credit, the candidate must have stated a recommendation in addition to completing the calculations.

First, calculate total incurred claims for each year. Based on information provided in question, claims are complete within five months of incurral.

Inc. Year	Months Between Incurral and Payment					
	0	1	2	3	4	Total
	Number of Claims Paid					
2018	792	396	264	132	72	1,658
2019	912	455	302	154	84	1,907

5.   Continued

Next, calculate completion factors. The completion factor at duration *n* is the sum of claims paid through duration *n* divided by the ultimate number of paid claims.

Inc. Year	Completion Factors (number of claims)				
Duration	0	1	2	3	4
2018	47.8%	71.7%	87.7%	95.7%	100.0%
2019	47.8%	71.7%	87.5%	95.6%	100.0%

Because the completion factors are nearly identical in both years, recommend using 2019 factors (or an average of 2018 and 2019 factors).

(b)   Calculate the number of incurred but not paid (IBNP) claims and the IBNP dollar amount for incurral months Oct 2020 to Dec 2020 using the completion factor method. Show your work.

Commentary on Question:
Some candidates forgot to include the number of IBNP claims and went directly to IBNP dollar amounts, missing half of the possible credit. Many candidates used 2018/2019 claims experience to calculate the average claim amounts, even though 2020 experience is markedly different. Many candidates also applied the completion factors derived in part (a), which were calculated on claim counts, directly to the incurred claims dollars, instead of to the incurred claims counts.

First, calculate number of claims paid to date, use incurral factors from part (a) to estimate ultimate expected number of claims, and subtract expected claims from claims paid to date to arrive at incurred but not paid claims count.

Inc. Month	Number of Claims by Paid Month			Claims Paid to Date	Duration	Completion Factor	Expected Claims	Claim Count IBNP
	Oct-2020	Nov-2020	Dec-2020					
Oct-2020	38	23	12	73	2	87.5%	83.4	10.4
Nov-2020		46	23	69	1	71.7%	96.3	27.3
Dec-2020			38	38	0	47.8%	79.5	41.5
Total				180			259.1	**79.1**

Next, calculate average claim size for Q4 2020 based on claims paid to date.

Total claims payments through December 2020: $8.9 million + $8.4 million + $4.6 million = $21.9 million.

5. Continued

Average claim to date: $21.9 million / 180 = $121,667

Finally, calculate total IBNP claims dollars:

IBNP Claims = $121,667 * 79.1 = **$9.63 million**

(c) Propose questions to investigate based on your analysis of the patterns in the claims data. Justify your answer.

Commentary on Question:
In order to receive full credit, candidates needed to provide at least two observations on the data patterns and propose relevant question(s) based on each of those observations. Four possible observations and questions are provided below. Many candidates just provided a general list of questions not tied to any particular observations and were awarded partial credit.

Observation #1: Total number of claims increased from 1,656 in 2018 to 1,907 in 2019, a 15.2% increase. This is significantly higher than the 4% annual mortality rate suggested by recent studies.

Questions: Have premium or lives inforce for the two years been reviewed to see if they exhibit the block of business growth? Is experience deteriorating for other reasons?

Observation #2: Average claim size increased from $105,676 in 2018 to $110,121 in 2019, a 4.2% increase, and to $121,667 in 2020, a 10.5% increase from 2019. This is significantly higher than the 3% annual wage increase suggested by recent studies, and group life benefits are typically in proportion to wages.

Questions: Have claims been reviewed to see if there is a selection issue? Have new groups been added with higher salaries or richer benefits?

Observation #3: Estimated annualized number of claims in 2020 is 1,036, a decrease of 45.6% from 2019 claims, an extremely large drop.

Questions: Have premium or lives inforce for Q4 been reviewed to see if there was a significant drop? Are there seasonality effects (Q4 claims tend to drop compared to other quarters)?

Observation #4: Claims incurred and paid in November 2020 are 46, much higher than duration 0 claims in October and December (38 each month).

Questions: Were there issues with claims processing in those months (backlogs of claims to be paid, issues with claims processing systems, etc)?

6. **Learning Objectives:**

5. The candidate will understand how to evaluate the impact of regulation and taxation on companies and plan sponsors in the US.

Learning Outcomes:

(5c) Apply applicable standards of practice.

Sources:

ASOP 19, Section 4.1, part a)

GHFV-130-19: Ch. 4 of Insurance Industry Mergers and Acquisitions, Toole and Herget, sections 4.1-4.5 & 4.7-4.8
- pages 113-114, part b)
- pages 111-112, part c)
- pages 106-128, part d)

Commentary on Question:

Candidates generally scored lower on calculation sections, b) and c), than on the written sections, a) and d).

Solution:

(a) List items you should disclose pursuant to ASOP 19 when preparing a report on an actuarial appraisal.

Commentary on Question:

Many candidates who responded to part a) received full credit.

- Scope of the report
- Principal the report is prepared for
- Any other parties (intended users) the actuary states responsibility towards
- The date of the appraisal
- The value of the appraisal or range of values
- The methods used
- The model used
- Results of model validation

(b)

    (i) Calculate the embedded value of the group disability block as of 12/31/2020.

    (ii) Calculate the actuarial appraisal value of the group disability block as of 12/31/2020..

    Show your work.

6. **Continued**

Commentary on Question:
Very few candidates received full credit for part b). Common errors included failing to adjust for tax and for cost of capital. Partial credit was given to candidates who made common errors.

EV = adjusted net worth ANW + inforce business value IBV			
EV =		Do not consider new business not sold as of valuation date for EV	
		$ 224,000,000 part i	IBV = PVBP for existing business - CoC

AV = value of future business VFB + value of inforce business VIFB + adjusted net worth ANW		
AV =	Future business is included	
	$ 354,000,000 Part ii	

(c) Calculate the actuarial appraisal value of Cherry as of 12/31/2020 assuming a 3-year time horizon. Show your work.

Commentary on Question:
Very few candidates received full credit for part c), but most candidates who responded received a significant amount of credit. Common errors include failing to adjust for tax, adjusting for GAAP instead of STAT reserves, and failing to keep year-to-year adjustments consistent. Partial credit was given to candidates who made common errors.

						Change in				
Interest rate		7.00%	CAPM = rf+beta*(rm-rf)		Use this, GAAP is not used for appraisals					
	Premium		Members	Claims	Expenses	Stat claim reserve	reserve	After tax NI	RC	Change in RC
2020	9,000,000			6,300,000	900,000	1,800,000			900,000	
2021	10,000,000		10,000	7,000,000	1,000,000	2,000,000	200,000	1,422,000	1,000,000	100,000
2022	12,000,000		12,000	8,400,000	1,200,000	2,400,000	400,000	1,580,000	1,200,000	200,000
2023	14,400,000		14,400	10,080,000	1,440,000	2,880,000	480,000	1,896,000	1,440,000	240,000
								=(premiums-claims-expenses-change in reserve)*(1-tax rate [1]		

Actuarial appraisal = PV of after tax stat NI - PV capital increases	
$ 3,792,649	Answer

(d) Describe eight reasons why Plum might ultimately buy Cherry at a different amount than your appraisal value.

Commentary on Question:
Many candidates who responded to part d) received full credit.

- Plum expects synergies with Cherry's business and/or markets so they can afford to pay more for the deal
- Plum wants to leverage superior technology
- Plum wants to prevent Cherry from gaining a foothold in the market so they will pay extra to do so
- Plum management decides to use a different interest rate
- There could be many other companies bidding for Cherry
- Plum could be working on an urgent time window so they may end up paying more

6. **Continued**

- Plum management could decide to change their new business profitability assumptions due to ideas of how they will run the business
- Plum management may decide to change the way existing business is run and the related assumptions

7. **Learning Objectives:**
1.   The candidate will understand and apply valuation principles for insurance
contracts.

Learning Outcomes:
(1g)   Apply applicable standards of practice related to reserving.

Sources:
Read. Think. Write., Health Section News, Oct 2004
ASOP 41, Sections 3-4

Commentary on Question:
*This question tested candidates' knowledge of actuarial communication and the
recommended practices from ASOP 41. It also tested their knowledge of the six opinions
that an actuary is required to make when signing an actuarial opinion, and how they
would apply to a hypothetical example.*

Solution:
(a)   Explain how eight considerations from ASOP 41 apply to an actuary's work
signing actuarial opinions for annual statements.

Commentary on Question:
*Most candidates were able to identify several considerations specified in ASOP
41, but few were able to list enough to receive full credit. Some candidates
provided several examples that fell under a particular consideration, while the
graders were looking for a broader list of considerations. For example, listing
form and content, clarity, and timing was only one consideration and not three.*

- Actuarial communications should be appropriate in form and content, clarity,
and timing, and should identify the responsible actuary.
- The actuary should complete an actuarial report if they intend the findings to
be relied upon by any intended user. The report should explain findings,
methods, and assumptions.
- Specific circumstances may constrain the content of the actuarial report. The
actuary should justify any limitation.
- The actuarial report must make certain disclosures, including uncertainty or
risk, conflict of interest, reliance on sources for data and information,
responsibility for assumptions and methods, the information date of the report,
and subsequent events.
- The actuarial opinion should identify the signing actuary and other disclosures
such as the intended users and scope and purpose of the opinion.
- The actuary should disclose reliance on other sources for assumptions and
methods.
- The actuary should disclose when assumptions or methods are prescribed by
law.
- The actuary should disclose and explain any material deviation from an
ASOP.

7. Continued

(b) List six statements that the actuary is asked to make regarding financial items when signing an actuarial opinion for an annual statement.

Commentary on Question:
Most candidates either received nearly full credit or no credit at all. Credit was granted for responses that were close to the recommended solution. For example, saying that "assumptions were appropriate" was acceptable instead of "liabilities are based on appropriate actuarial assumptions".

- The liabilities are in accordance with accepted actuarial standards.
- The liabilities are based on appropriate actuarial assumptions.
- The liabilities meet the requirements of the state.
- The liabilities make good and sufficient provision for all unpaid claims and other actuarial liabilities.
- The liabilities are consistent with the preceding year-end.
- The liabilities make provision for all items which ought to be established.

(c) Recommend how to address issues you face as the signing actuary, referring to the scenarios above and relevant items from the list in (b), for:

(i) Company Alpha

(ii) Company Bravo

Commentary on Question:
Most candidates who answered this question performed well, even if they could not answer (b). Candidates received credit for making a recommendation of how they would address each issue. Some candidates did not receive all the points because they omitted one of the issues. Candidates did not receive credit if the recommendation was unclear, too vague, or did not actually address the specific issue.

This question was left blank on several exams.

(i) Company Alpha
- Actuarial liabilities must meet the legal requirements of the state of domicile. The actuary should be careful in this case due to the unusual requirements.
- Liabilities must be in accordance with accepted actuarial standards, consistently applied. However, it is acceptable to use various reserve methods if there are sound actuarial reasons.

7. **Continued**

- You could ask management to reduce the reserves because the liabilities are too high. Alternatively, you could qualify the statement to say the liabilities "make sufficient provision" (not "good", because the liabilities are too high).
- The liabilities must "make provision for all items which ought to be established", so you need to understand the business. You should talk to the management to find out about the possible new line and any other relevant information.

(ii) Company Bravo
- Liabilities should be "consistent with the preceding year end". Since you were not involved and have no knowledge of the prior calculations, you can issue a qualified statement explaining this. Alternatively, you could get that information from management and become familiar with the prior year's numbers in order to evaluate them.
- The liabilities should be "based on appropriate actuarial assumptions". You should determine whether you agree the assumptions set by management are appropriate, and qualify your statement if needed.
- The liabilities should "make good and sufficient provision" for claims. In this case, the liabilities are clearly too low. You could ask management to change the reserves, or refuse to sign the statement. It does not make much sense to qualify the statement, as the reserves being too low is a critical problem.
- The liabilities must "make provision for all items which ought to be established". If you do not have enough information to evaluate the reserve for experience-rated refunds, you could issue a qualified opinion stating that. Alternatively, you could get a reliance letter from management stating that the actuary has been informed of all relevant items.