9. (2 points)

The following are considerations for pricing a large deductible policy:

- Deductible = $750,000 per occurrence.
- Expected total ground-up losses = $1,500,000.
- ALAE = 12% of total ground-up losses.
- Fixed expenses = $75,000.
- Variable expenses = 15% of premium.
- Underwriting profit provision = 3%.
- Risk margin = 10% of excess losses.
- Cost of processing losses below the deductible = 5% of losses below the deductible.
- Credit risk = 1.5% of expected deductible payments.
- Deductible applies to losses only and does not reduce ALAE.
- Loss elimination ratios (LER) and excess ratios are:

Loss Limit ($000)	LER	Excess Ratio
$500	85%	15%
$750	90%	10%
$1,000	95%	5%

Calculate the large deductible premium.

CONTINUED ON NEXT PAGE

QUESTION 9

TOTAL POINT VALUE: 2 | **LEARNING OBJECTIVE(S): A8**

SAMPLE ANSWERS

Sample 1

Expected Excess losses = 1,500,000 x 10% = 150,000
Expected deductible losses = 1,500,000 x 90% = 1,350,000
ALAE = 12% x 1,500,000 = 180,000
RM = 10% x 150,000 = 15,000
Cost of Processing deductible = 5% x 1,350,000 = 675,00
CR = 1.5% x 1,350,000 = 20,250

$$\text{Premium} = \frac{150{,}000 + 180{,}000 + 75{,}000 + 15{,}000 + 67{,}500 + 20{,}250}{1 - 15\% - 3\%}$$

= 619207

Sample 2

Large ded premium

$$\text{Ind prem} = \frac{432{,}750 + 75{,}000}{1 - .15 - .03}$$

= 619,207

Sample 3

Legal = 1.5M (.12) = 180,000
Risk = 1.5M (.10)*(.10) = 15,000
proc < ded = 1.5(.9)(.05) = 67,500
1.5(.9)(.015) = 20,250

Losses itself = 1.5(.10) = 150,000
Z = 432,750

$$\frac{1500000\,[0.1 + 0.12 + 0.05 \times 0.90 + 0.015 \times 0.9 + 0.10 \times 0.10] + 75000}{1 - 0.03 - 0.15}$$

$$= \frac{507750}{1 - 0.18} = \$619207$$

Sample 4

Deductible = $750,000
LER = 0.90

Excess losses + includes risk margin | ALAE | cost of processing & credit risk

$$\text{Large deductible premium} = \frac{1500{,}000(.10)(1.10) + 1500000(.12) + 1500000(.9)(.065) + 75000}{1 - 0.03 - 0.15}$$

= $619,207.32

EXAMINER'S REPORT

Candidates were expected to choose the correct loss elimination ratio from the table given and use it along with the other information given to calculate the large deductible premium.

Candidates performed very well on this question. The calculation was straightforward, and based on an example directly from the Werner & Modlin text.

Common mistakes included:

- Forgetting to include all components in the final formula, most commonly fixed expenses
- Not using the correct loss elimination ratio, or using some average of all the loss elimination ratios
- Assuming "deductible payments" referred to the per occurrence deductible of $750,000
- Using the expected losses below the Loss Elimination Ratio in the final equation
- Applying the credit risk in the denominator