

21. (1.25 points)

Given the following information:

Accident Year	On-Level Earned Premium (\$000)	Cumulative Reported Claims (\$000)	Reported CDF to Ultimate
2014	750	500	1.100
2015	800	475	1.250
2016	1,000	400	1.550

- A legislative change effective January 1, 2016 is expected to reduce claims costs by 20% for claims occurring after the effective date.

Estimate ultimate claims for accident year 2016 using the Cape Cod technique.

## SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 21

TOTAL POINT VALUE: 1.25

LEARNING OBJECTIVE(S): B3, B5

SAMPLE ANSWERS

Sample 1

CC ELR =

500 \* 0.8 + 475 \* 0.8 + 400

750 \* (1/1.1) + 800 \* (1/1.25) + 1,000 \* (1/1.55)

= 1,180/1,967 = 0.6

AY 2016 Ult = 400 + 0.6 \* 1,000 \* (1 – 1/1.55) = 612.9

Sample 2

AY	Adjusted Reported Claims	CDF	Ultimate Losses	OLEP
2014	500 * (1-20%) = 400	1.1	440	750
2015	475 * (1-20%) = 380	1.25	475	800
2016	400	1.55	620	1,000
Total			1,535	2,550

CC ELR = 1,535 / 2,550 = 60.2%

Ult Claims for AY 2016 = 400 + 1,000 \* 60.2% \* (1 – 1/1.55) = 613.6

EXAMINER’S REPORT

Candidates were expected to know the mechanics and assumptions associated with the Cape Cod estimation technique. Candidates were expected to adjust the reported claims for a legislative change.

Common errors included:

- Not adjusting the reported claims for legislative change or not using the correct reform factor by accident year. For example, using a 1.20 reform factor or a 0.80 reform factor for accident year 2016. The correct reform factors are 0.80 for accident years 2014 and 2015 and 1.00 for accident year 2016.
- Not properly deriving the Cape Cod expected claim ratio by developing the reported claims to ultimate while also using the used up premiums.
- Not properly deriving the Cape Cod expected claim ratio by either not calculating used-up premiums or not developing losses to ultimate.
- Selecting an expected claim ratio rather than using aggregated losses and used up premiums for the Cape Cod claim ratio calculation.
- Using the incorrect formula for the ultimate claims calculation. For example, obtaining the ultimate claims by simply multiplying the Cape Cod expected claim ratio by the earned premium.