

# ACTEX LTAM Study Manual

## Spring 2020 Edition

### Errata

Jul 2, 2020

C5-44 16: add (vi)  $A_{80} = 0.54092$

C5-61 and C5-62 16: change 592.93 to 540.92, and the final answer to 800.85.

C10-44 line -2: change 6.292526 to 4.89253

$$\text{C10-78 20(b)} \quad \frac{d}{dt} {}_t p_x^{02} = {}_t p_x^{00} \mu_{x+t}^{02} + {}_t p_x^{01} \mu_{x+t}^{12}$$

C12-75 9 Starting from line 3 of the expression at the middle: ... = 8.380037S

$$\text{last 2 lines: } \frac{8.380037S}{13.5498} = 0.618462S \dots \text{ So the ratio is } 0.618462 / 1.03^{34} = 22.64\%$$

C12-78 12(b) The benefit related to past service is the accrual rate multiplied with the total salary earned from May 1, 2012 to April 30, 2022:

$$2.5\%(40000 + 40000 \times 1.035 + \dots + 40000 \times 1.035^9) = 0.025 \times 40000 \times \frac{1.035^{10} - 1}{0.035} = 11731.39$$

The benefit related to future services is  $66674.013 - 11731.39 = 54942.62$ .

C13-6 Example 13.2 First line: We revisit Example 7.7 again.

C14-14 2<sup>nd</sup> line:  $CI = (0.340909e^{-0.7339927}, 0.340909e^{+0.7339927}) = (0.163632, 0.710244)$ .

3<sup>rd</sup> line: The corresponding CI for  $S(3)$  is  $(e^{-0.710244}, e^{-0.163632}) = (0.49152, 0.84905)$ .

C14-43 12 line 6: So the **variance** estimate is ... = 0.00016

Also change the two 0.0016 in the next paragraph to 0.00016.

C14-43 14: Add  $\hat{H}(4) = \frac{1}{6} + \frac{2}{7} + \frac{2}{3}$  before “= 1.1190”

C15-29 line -2: Change the  $K_t^{(2)}$  to  $K_t^{(3)}$ .

C16-19 The equation before the equation box: change the  $e^{-gk/m}$  in the summation to  $e^{gk/m}$ .

C16-46 line -4: Change 1/7/2012 to 7/1/2012

T1-5 7 Change the first three options as (A) 53% (B) 63% (C) 73%

T1-18 Change the option of 7 from B to C (do the same T1-19 Q7)

T1-20 line 1:  $\frac{61.436416S}{13.5498 - 1} = 4.89541S$  line 3: So the ratio is  $4.89541 / 1.05^{39} = 73.01\%$ .