

## Errata and Updates for ASM Exam MLC (Fifteenth Edition Fifth Printing) Sorted by Date

- [3/27/2018] On page 1232, on the last line of the page, change the exponents in the denominator from 32, 33, 34, 35 to 22, 23, 24, 25 respectively.
- [1/25/2018] On page 258, two lines above Example 12G, add “for” between “benefits” and “a coverage”.
- [1/25/2018] On page 496, 5 lines from the bottom of the page, change 45 to (45).
- [1/25/2018] On page 647, on the fourth line of Example 32C, change “age (50)” to “age 50”.
- [1/8/2018] On page 1917, in the solution to part (a) of question 1, on the third line, delete the minus sign in front of  $(0.04 + 0.01t)dt$ .
- [1/8/2018] On page 1917, in the solution to part (c)(i) of question 1, replace  ${}_t p_{40+t}^{00}$  with  ${}_t p_{40}^{00}$ . In the solution to part (c)(ii) of question 1, replace  ${}_t p_{40+t}^{01}$  with  ${}_t p_{40}^{01}$ . In the solution to part (d) of question 1, replace the last line with the following two lines:

$${}_{0.2}p_{40}^{01} = 0.003 + 0.1((0.996)(0.03) - 0.003(0.01 + 0.012)) = 0.005981$$

The expected number of disableds is  $100(0.005981) = \boxed{0.5981}$ .

- [1/8/2018] On page 1920, in the solution to question 4(b), on the second-to-last line, change  $+0.96G$  to  $-0.96G$ . On the last line, change  $g$  to  $G$ .
- [1/8/2018] On page 1927, in the solution to question 1(a)(i), on the first line, change  $a_{50:\overline{10}|}$  to  $\ddot{a}_{50:\overline{10}|}$ .
- [1/8/2018] On page 1928, in the solution to question 1(d), on the second line, change  $A_{51:\overline{9}|}$  to  $A_{51:\overline{19}|}$  and  $\ddot{a}_{51:\overline{19}|}$  to  $\ddot{a}_{51:\overline{9}|}$ .
- [1/8/2018] On page 1933, in the solution to question 6(a), on the first line, change  ${}_j p_x^{0j}$  to  ${}_t p_x^{0j}$ .
- [1/7/2018] On pages 1919–1920, in the solution to question 3(a), on the last line, change 90,838.31 to 90,838.43. In the solution to question 3(b) on page 1920, on the last line, change 90,838.42 to 90,838.43. On the last line of the solution to question 3(c), change 1949.63 to 1943.74.
- [1/6/2018] On pages 1918–1919, replace the solution to part (d) of question 2 with

The single premium we want is the present value of benefits for death at time  $x > 10$ , where the probability of death between time 10 and time  $x$  equals 40%, since the present value of benefits is less than the present value of benefits for death at time  $x$  when death occurs before time 10 or after time  $x$ . In other words, we want  $x$  such that

$$\frac{l_{50} - l_x}{l_{40}} = 0.4$$

Now,  $l_{40} = 9,313,166$  and  $l_{50} = 8,950,901$ , so we want

$$\begin{aligned} 8,950,901 - l_x &= 0.4(9,313,166) = 3,725,266.4 \\ l_x &= 5,225,635.6 \end{aligned}$$

But the age  $y$  such that  $l_y = 5,225,635.6$  is greater than 75. So it suffices to cover the loss if death occurs after age 75 or before time 10, and the highest benefit payable for deaths at those times is the pure endowment benefit payable for deaths after age 75. This has present value  $50,000/1.06^{35} = \boxed{6,505.26}$ .