EXAM MLC QUESTIONS OF THE WEEK

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Week of February 19/07

Given that $\ddot{a}_{62:\overline{10}|} = 7.72$, $\ddot{a}_{62:\overline{11}|} = 8.22$ and $\ddot{a}_{62:\overline{20}|} = 11.00$, what is the value per \$1,000 benefit, assuming level benefit premiums, of the 10th year terminal benefit reserve on a 20 year fully discrete endowment insurance policy issued to (62) (nearest \$5) ?

A) 400 B) 405 C) 410 D) 415 E) 420

The solution can be found below.

Week of February 19/07 - Solution

${}_{10}V_{62:\overline{2}\overline{0}|} = 1 - \frac{\ddot{a}_{72:\overline{1}\overline{0}|}}{\ddot{a}_{62:\overline{2}\overline{0}|}}$. But $\ddot{a}_{62:\overline{2}\overline{0}|} = \ddot{a}_{62:\overline{1}\overline{0}|} + {}_{10}E_{62} \cdot \ddot{a}_{72:\overline{1}\overline{0}|}$

$\rightarrow \ddot{a}_{72:\overline{1}\overline{0}|} = \frac{\ddot{a}_{62:\overline{2}\overline{0}|} - \ddot{a}_{62:\overline{1}\overline{0}|}}{{}_{10}E_{62}}$ and ${}_{10}E_{62} = \ddot{a}_{62:\overline{1}\overline{1}|} - \ddot{a}_{62:\overline{1}\overline{0}|} = .5 \rightarrow \ddot{a}_{72:\overline{1}\overline{0}|} = 6.56$

$\rightarrow {}_{10}V_{62:\overline{2}\overline{0}|} = .4036$. Answer: B.