

Question #285

Answer: B

$${}_1|a_{70:\overline{2}|} = v^2 {}_2P_{70} + v^3 {}_3P_{70}$$

$${}_tP_{70} = e^{-At} e^{\left(\frac{-B}{\ln c}\right)c^x(c^t-1)} = e^{-0.0002t} e^{\left(\frac{-0.000003}{\ln(1.1)}\right)1.1^{70}(1.1^t-1)} = e^{-0.0002t} (0.9754483)^{1.1^t-1}$$

$${}_2P_{70} = e^{-0.0002(2)} (0.9754483)^{1.21-1} = 0.9943956$$

$${}_3P_{70} = e^{-0.0002(3)} (0.9754483)^{1.331-1} = 0.9912108$$

$${}_1|a_{70:\overline{2}|} = 0.9943956 / 1.05^2 + 0.9912108 / 1.05^3 = 1.7582.$$