

### Question #157

Answer: B

$$d = 0.06 \Rightarrow V = 0.94$$

Step 1 Determine  $p_x$

$$668 + 258vp_x = 1000vq_x + 1000v^2 p_x (p_{x+1} + q_{x+1})$$

$$668 + 258(0.94)p_x = 1000(0.94)(1 - p_x) + 1000(0.8836)p_x(1)$$

$$668 + 242.52p_x = 940(1 - p_x) + 883.6p_x$$

$$p_x = 272 / 298.92 = 0.91$$

Step 2 Determine  $1000P_{x:\overline{2}|}$

$$668 + 258(0.94)(0.91) = 1000P_{x:\overline{2}|} [1 + (0.94)(0.91)]$$

$$1000P_{x:\overline{2}|} = \frac{[220.69 + 668]}{1.8554} = 479$$