

### Question #107

Answer: B

$$\text{Variance} = v^{30} {}_{15}p_x {}_{15}q_x \qquad \text{Expected value} = v^{15} {}_{15}p_x$$

$$v^{30} {}_{15}p_x {}_{15}q_x = 0.065 \quad v^{15} {}_{15}p_x$$

$$v^{15} {}_{15}q_x = 0.065 \Rightarrow {}_{15}q_x = 0.3157$$

Since  $\mu$  is constant

$${}_{15}q_x = \left(1 - (p_x)^{15}\right)$$

$$(p_x)^{15} = 0.6843$$

$$p_x = 0.975$$

$$q_x = 0.025$$