

Question #14

Key: A

$$\bar{P}(\bar{A}_x) = \mu = 0.03$$

$${}^2\bar{A}_x = 0.20 = \frac{\mu}{2\delta + \mu} = \frac{0.03}{2\delta + 0.03}$$

$$\Rightarrow \delta = 0.06$$

$$\text{Var}({}_0L) = \frac{{}^2\bar{A}_x - (\bar{A}_x)^2}{(\delta \bar{a})^2} = \frac{0.20 - \left(\frac{1}{3}\right)^2}{\left(\frac{0.06}{0.09}\right)^2} = 0.20$$

$$\text{where } A = \frac{\mu}{\mu + \delta} = \frac{0.03}{0.09} = \frac{1}{3} \quad \bar{a} = \frac{1}{\mu + \delta} = \frac{1}{0.09}$$