

**Question # 76****Answer: C**

This solution applies the equivalence principle to each life. Applying the equivalence principle to the 100 life group just multiplies both sides of the first equation by 100, producing the same result for  $P$ .

$$\begin{aligned}EPV(\text{Prens}) = P &= EPV(\text{Benefits}) = 10q_{70}v + 10p_{70}q_{71}v^2 + Pp_{70}p_{71}v^2 \\P &= \frac{(10)(0.03318)}{1.08} + \frac{(10)(1 - 0.03318)(0.03626)}{1.08^2} + \frac{P(1 - 0.03318)(1 - 0.03626)}{1.08^2} \\&= 0.3072 + 0.3006 + 0.7988P \\P &= \frac{0.6078}{0.2012} = 3.02\end{aligned}$$

( $EPV$  above means Expected Present Value).