

### Question #231

Answer: C

$$1000A_{81} = (1000A_{80})(1+i) - q_{80}(1000 - A_{81})$$

$$689.52 = (679.80)(1.06) - q_{80}(1000 - 689.52)$$

$$q_{80} = \frac{720.59 - 689.52}{310.48} = 0.10$$

$$q_{[80]} = 0.5q_{80} = 0.05$$

$$\begin{aligned} 1000A_{[80]} &= 1000vq_{[80]} + vp_{[80]}1000A_{81} \\ &= 1000 \times \frac{0.05}{1.06} + 689.52 \times \frac{0.95}{1.06} = 665.14 \end{aligned}$$