Question #169
Answer: A

T	p_{x+t}	${}_t p_x$	v^t	$v^t {}_t p_x$
0	0.7	1	1	1
1	0.7	0.7	0.95238	0.6667
2	–	0.49	0.90703	0.4444
3	–	–	–	–

From above $\ddot{a}_{x:\overline{3}|} = \sum_{t=0}^{2} v^t {}_t p_x = 2.1111$

$$1000\,{}_2V_{x:\overline{3}|} = 1000\left(1 - \frac{\ddot{a}_{x+2:\overline{1}|}}{\ddot{a}_{x:\overline{3}|}}\right) = 1000\left(1 - \frac{1}{2.1111}\right) = 526$$

Alternatively,

$$P_{x:\overline{3}|} = \frac{1}{\ddot{a}_{x:\overline{3}|}} - d = 0.4261$$

$$\begin{aligned} 1000\,{}_2V_{x:\overline{3}|} &= 1000\left(v - P_{x:\overline{3}|}\right) \\ &= 1000\left(0.95238 - 0.4261\right) \\ &= 526 \end{aligned}$$

You could also calculate $A_{x:\overline{3}|}$ and use it to calculate $P_{x:\overline{3}|}$.