EXAM MLC QUESTIONS OF THE WEEK

S. Broverman, 2008

Week of March 3/08

You are given the following factors:

$${}_tV_x = a \ , \ {}_tV_{\overline{1}_{x:\overline{n}|}} = b \ , \ P_x = c \ , \ P_{\overline{1}_{x:\overline{n}|}} = d \ , \ P_{x:\overline{n}|} = e$$

Find an expression for ${}_tV_{x:\overline{n}|}$ in terms of $a, b, c, d,$ and e.

The solution can be found below.

Week of March 3/08 - Solution

$${}_tV_{x:\overline{n}|} - {}_tV^1_{x:\overline{n}|} = (P_{x:\overline{n}|} - P^1_{x:\overline{n}|}) \cdot \ddot{s}_{x:\overline{n}|}$$

and

$${}_tV_{x} - {}_tV^1_{x:\overline{n}|} = (P_{x} - P^1_{x:\overline{n}|}) \cdot \ddot{s}_{x:\overline{n}|}$$

so that

$$\frac{{}_tV_{x:\overline{n}|} - {}_tV^1_{x:\overline{n}|}}{{}_tV_{x} - {}_tV^1_{x:\overline{n}|}} = \frac{P_{x:\overline{n}|} - P^1_{x:\overline{n}|}}{P_{x} - P^1_{x:\overline{n}|}}$$

and then

$${}_tV_{x:\overline{n}|} = {}_tV^1_{x:\overline{n}|} + \frac{P_{x:\overline{n}|} - P^1_{x:\overline{n}|}}{P_{x} - P^1_{x:\overline{n}|}} \times ({}_tV_{x} - {}_tV^1_{x:\overline{n}|}) = b + \frac{e-d}{c-d} \cdot (a-b)$$