Exercise 4.2

(a) $A^1_{30:\overline{20|}} = A_{30} - {}_{20}E_{30}\, A_{50} = 0.07698 - (0.37254)(0.18931) = 0.006454453$

(b) Assuming UDD, $\bar{A}_{40:\overline{20|}} = \dfrac{i}{\delta} A^1_{40:\overline{20|}} + {}_{20}E_{40} = \dfrac{0.05}{\log(1.05)}(0.12106 - (0.36663)(0.29028)) + 0.36663 = 0.3816275$

(c) ${}_{10|}A_{25} = {}_{10}E_{25}\, A_{35} = (0.61198)(0.09653) = 0.5907443$