

MATH 3630 - Actuarial Mathematics I
 Fall 2016 - Valdez
 Quiz No. 5
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The present value random variable for a life insurance issued to (40) is given by

$$Z = \begin{cases} 100 v^{K+1}, & K = 0 \\ 200 v^{K+1}, & K = 1 \\ 300 v^{K+1}, & K = 2, 3, \dots \end{cases}$$

where K is the curtate future lifetime of (40).

You are given:

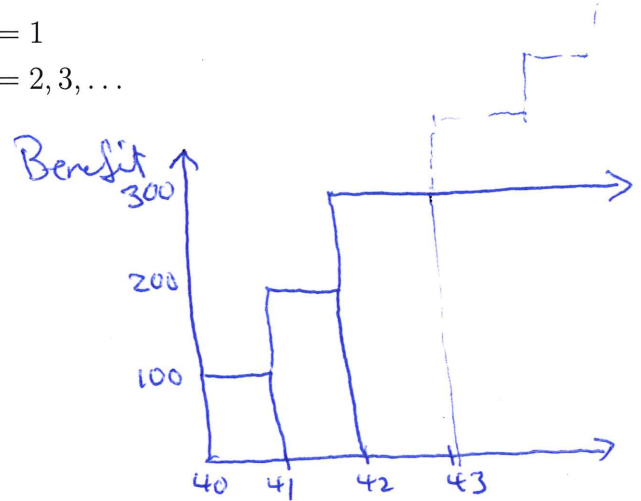
$$A_{40} = 0.5084$$

$$A_{43} = 0.5519$$

$$(IA)_{40} = 8.6740$$

$$(IA)_{43} = 8.2879$$

$${}_3E_{40} = 0.8844$$



Calculate $E[Z]$.

This is the APV of a whole life insurance of 100 if death in 1st yr
 200 if death in 2nd yr
 300 if death thereafter

So this is clearly equivalent to

$$E[Z] = APV = 100(IA)_{40} - 100 {}_3E_{40} (IA)_{43}$$

$$= 100 [8.6740 - (0.8844)(8.2879)]$$

$$= \underline{134.4181}$$