

9.5 Annuity Formulae 3

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12:25 PM

Four useful things of Annuity Formulae

1) IF Payments start at $t=0$?

$$s(1, A, T, \delta) = aA$$

$$s(0, A, T, \delta) = A + aA = (1+a)A$$

2) $T \rightarrow \infty$

$$a = (\delta / (1-\delta)) (1-\delta^T)$$

if $0 < \delta < 1$ $\delta^T \rightarrow 0$ as $T \rightarrow \infty$

$a \rightarrow \delta / (1-\delta) \rightarrow \text{perpetuity}$

3) $\delta = 1/(1+y)$, $T \rightarrow \infty$
 $1/y$

$$i = 3\% \quad 1k \rightarrow a = 1/.03 = 33.33 \rightarrow a = 1/.03 (1 - (1/.03)^{50}) = 25.72$$

100 years = 31.6