Annuity Symbols

Type of Coverage	Payable Continuously	Payable at Beginning of Year	Payable at Beginning of mth
whole life annuity	$\_\_\_\_ = \frac{1-\bar{A}_x}{\delta}$	$\ddot{a}_x = \frac{1-\_\_\_\_}{\_\_}$	$\_\_\_\_ = \frac{1-A_x^{(m)}}{\_\_\_\_}$
n-year temporary life annuity	$\_\_\_\_ = \frac{1-\_\_\_\_}{\delta}$	$\ddot{a}_{x:\overline{n}\rceil} = \frac{1-\_\_\_\_}{\_\_\_}$	$\_\_\_\_ = \frac{1-A_{x:\overline{n}\rceil}^{(m)}}{\_\_\_\_}$
n-year deferred life annuity	${}_{n\|}\bar{a}_x = \_\_\_\_ \cdot \bar{a}_{x+n} = \_\_\_\_ - \bar{a}_{x:\overline{n}\rceil}$	${}_{n\|}\ddot{a}_x = \_\_\_\_ \cdot \ddot{a}_{x+n} = \_\_\_\_ - \ddot{a}_{x:\overline{n}\rceil}$	${}_{n\|}\ddot{a}_x^{(m)} = \_\_\_\_ \cdot \ddot{a}_{x+n}^{(m)} = \_\_\_\_ - \ddot{a}_{x:\overline{n}\rceil}^{(m)}$
n-year certain and life annuity	$\bar{a}_{\overline{x:n}\rceil} = \_\_\_\_ + \_\_\_\_$	$\ddot{a}_{\overline{x:n}\rceil} = \_\_\_\_ + \_\_\_\_$	$\ddot{a}_{\overline{x:n}\rceil}^{(m)} = \_\_\_\_ + \_\_\_\_$

Annuity Formulas

Type of Coverage	Payable Continuously	Payable at Beginning of Year	Payable at Beginning of mth
General Formula	$\int_a^b v^t \cdot \_\_\_ \, dt$	$\sum_{k=a}^{b} v^k \cdot \_\_\_\_$	$\sum_{k=a}^{b} \frac{1}{m} v^{k/m} \cdot \_\_\_\_$
whole life annuity	$a = 0; b = \infty$ or end of table	$a = 0; b = \infty$ or end of table	$a = 0; b = \infty$ or end of table
n-year temporary life annuity	$a = 0; b = \_\_\_\_$	$a = 0; b = \_\_\_\_ - 1$	$a = 0; b = \_\_\_\_ - 1$
n-year deferred life annuity	$a = \_\_\_; b = \infty$ or end of table	$a = \_\_\_; b = \infty$ or end of table	$a = \_\_\_\_; b = \infty$ or end of table

Variances

Type of Coverage	Payable Continuously	Payable at Beginning of Year	Payable at Beginning of mth
whole life annuity			
n-year life annuity			

Relationships

$\_\_\_ = \ddot{a}_x - {}_n E_x \cdot \ddot{a}_{x+n}$	$\bar{a}_{x:\overline{n}\rceil} = \_\_\_ - {}_n E_x \cdot \_\_\_$	$\ddot{a}^{(m)}_{x:\overline{n}\rceil} = \_\_\_ - {}_n E_x \cdot \ddot{a}^{(m)}_{x+n}$	$\ddot{a}_x = 1 + \_\_ \cdot \_\_ \cdot \ddot{a}_{x+1}$	$\ddot{a}^{(m)}_x = \_\_\_ + v^{\frac{1}{m}} \cdot {}_{\frac{1}{m}}p_x \cdot \ddot{a}^{(m)}_{x+1/m}$	$\ddot{a}_{x:\overline{n}\rceil} = 1 + \_\_\_ \cdot \_\_\_ \cdot \ddot{a}_{x+1:\overline{n-1}\rceil}$
$\bar{A}_x = 1 - \delta \cdot \_\_\_$	$\bar{A}_{x:\overline{n}\rceil} = 1 - \delta \cdot \_\_$	$A_x = 1 - \_\_ \cdot \ddot{a}_x$	$\_\_\_ = 1 - d\ddot{a}_{x:\overline{n}\rceil}$	$A^{(m)}_x = 1 - \_\_\_ \cdot \ddot{a}^{(m)}_x$	$\_\_\_\_ = 1 - d^{(m)}\ddot{a}^{(m)}_{x:\overline{n}\rceil}$
$a_x = \ddot{a}_x - \_\_\_$	$a_{x:\overline{n}\rceil} = \ddot{a}_{x:\overline{n+1}\rceil} - \_\_\_$	$a_{x:\overline{n}\rceil} = \ddot{a}_{x:\overline{n}\rceil} - 1 + \_\_\_$	$a^{(m)}_x = \ddot{a}^{(m)}_x - \_\_\_\_$	$\_\_\_\_ = \ddot{a}^{(m)}_{x:\overline{n}\rceil} - \frac{1}{m} + \frac{1}{m} \cdot {}_n E_x$	
${}_{n\rceil}a_x = \_\_\_{\rceil} \ddot{a}_x$	$a_{x:\overline{n}\rceil} = a_{\overline{n}\rceil} + \_\_\_{\rceil}\ddot{a}_x$		$(I\ddot{a})_x = \sum_{t=0}^{\infty} v^t \cdot \_\_\_\_ \cdot {}_t p_x$	$(I\ddot{a})_{x:\overline{n}\rceil} = \sum_{t=0}^{\overline{n}} v^t (t+1) \cdot \_\_\_$	$(\bar{I}\bar{a})_{x:\overline{n}\rceil} = \int_0^n \_\_ \cdot \_\_ \cdot {}_t p_x \cdot dt$

Alpha/Beta Formula (Exact if UDD)

$\ddot{a}^{(m)}_x = \alpha(m) \cdot \_\_\_\_ - \_\_\_\_$

$\_\_\_\_ = \alpha(\infty) \cdot \_\_\_\_ - \beta(\infty)$

2-Term Woolhouse Approximation (see SULT Packet)

$\ddot{a}^{(m)}_x = \ddot{a}_x - \_\_\_\_\_$

$\bar{a}_x = \ddot{a}_x - \_\_\_\_$