

## Review for 09-27-2016

Annuities Paying More Frequently than Interest

Conversion:

$$a_{\overline{n}|}^{(m)} = \frac{i a_{\overline{n}|}}{i^{(m)}} \quad S_{\overline{n}|}^{(m)} = \frac{i S_{\overline{n}|}}{i^{(m)}}$$

Continuous Payment Annuities:

Payment

1

$$\bar{a}_{\overline{n}|} = \frac{i a_{\overline{n}|}}{\delta} = \frac{1 - e^{-n\delta}}{\delta}$$



$$\bar{S}_{\overline{n}|} = \frac{i S_{\overline{n}|}}{\delta} = \frac{e^{n\delta} - 1}{\delta}$$

Payments in Arithmetic Progression:

$$PV = P(a_{\overline{n}|}) + Q\left(\frac{a_{\overline{n}|} - nV^n}{i}\right)$$

$$PV \text{ of perpetuity immediate} = \frac{P}{i} + \frac{Q}{i^2}$$

$P > 0 \quad Q > 0$

Payments in Geometric Progression:

$$PV = \frac{1 - \left(\frac{1+k}{1+i}\right)^n}{i-k}$$

$i \neq k$

$$PV \text{ of perpetuity immediate} = \frac{1}{i-k}$$

$i > k$