

- What is the effective rate of interest for an investment at 9% compounded semi-annually?

$$\begin{aligned} i &= \left(1 + \frac{0.09}{2}\right)^2 - 1 & \begin{array}{l} Y = 0.09 \\ m = 2 \end{array} \\ &= \left(1 + \frac{0.09}{2}\right)^2 - 1 \\ &= 9.20\% \end{aligned}$$

$$r = 0.09 \quad m = 4$$

$$i = \left(1 + \frac{0.09}{4} \right)^4 - 1$$

$$= 9.30\%$$

- Find the interest and the amount in a savings account at the end of 9 months if \$304 is deposited at 3% per annum.

$$P = \$304 \quad t = \frac{9}{12} \quad r = 0.03$$

$$\begin{aligned} I &= Prt \\ &= (304)(0.03)\left(\frac{9}{12}\right) \\ &= \$6.84 \end{aligned}$$

$$\begin{aligned} A &= P + I \\ &= 304 + 6.84 \\ &= \$310.84 \end{aligned}$$

$$P = 430 \quad A = 450 \quad t = \frac{5}{12}$$

$$A = P(1 + rt)$$

$$A = P + Prt$$

$$450 = 430 + (430)(r)\left(\frac{5}{12}\right)$$

$$\begin{array}{r} 450 = 430 + 179.1666\bar{7}r \\ -430 \quad -430 \end{array}$$

$$\frac{20 = 179.1666\bar{7}r}{r = 0.1116 \times 100 = 11.16\%}$$