

4

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$$\frac{12000}{450} = \frac{450}{450} \left(1 + \frac{r}{4}\right)^{30 \times 4}$$

$$120 \sqrt[120]{26.667} = \sqrt[120]{\left(1 + \frac{r}{4}\right)^{120}}$$

$$1.028 = 1 + \frac{r}{4}$$

$$1.028 - 1 = \frac{r}{4}$$

$$4 \times 0.028 = \frac{r}{4} \times 4$$

$$r = 0.11 \text{ or } 11\% //$$

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PETE

$$1.) F.V = P.V \left(1 + \frac{r}{m} \right)^{m \times n}$$
$$\frac{12000}{21884} = \frac{21884}{21884} \left(1 + \frac{0.036}{12} \right)^{12 \times n}$$
$$54.83 = 1.003^{12n}$$

$$\log 54.83 = \log 1.003^{12n}$$

$$12n \frac{\log 1.003}{\log 1.003} = \frac{\log 54.83}{\log 1.003}$$

$$\frac{12n}{12} = \frac{1336.75}{12}$$

$$n = \underline{\underline{111.4 \text{ years}}}$$

3 a) Semi-annually

$$P.V = 8500$$

$$\text{Interest} = 6.2\%$$

$$\text{Time} = 1.5 \text{ years}$$

$$F.V = P.V \left(1 + \frac{s}{m}\right)^{m \times n}$$

$$F.V = 8500 \left(1 + \frac{6.2\%}{2}\right)^{2 \times 1.5}$$

$$F.V = 8500 (1.096)$$

$$F.V = \underline{\underline{\$ 9315.26}}$$

b) Interest

$$= 9315.26 - 8500$$

$$= \underline{\underline{\$ 815.26}}$$

c) Weekly

$$F.V = 8500 \left(1 + \frac{0.062}{52}\right)^{52 \times 1.5}$$

$$F.V = 8500 (1.0974)$$

$$= \underline{\underline{\$ 9327.908}}$$

d) Monthly 18 Months

$$F.V = 8500 \left(1 + \frac{0.062}{12}\right)^{12 \times 1.5}$$

$$F.V = 8500 (1.0975)$$

$$F.V = \underline{\underline{\$ 9326.934}}$$

e) Interest for Part d)

$$= 9326.934 - 8500$$

$$= \underline{\underline{\$ 826.934}}$$