

Week 12

1. $P = 5,000$
 $i = .08/4 = .02$
 $n = 4 \times 2 = 8$

$$A = 5000(1+.02)^8$$
$$A = 5000(1.17166)$$
$$A = \$5,858.30$$

2. $P = 50,000$
 $i = .03/12 = .005$
 $n = 8$

$$A = 50000(1+.005)^8$$
$$A = 50000(1.04071)$$
$$A = \$52,035.50$$

3. $A = 10,000$
 $i = .08/2 = .04$
 $n = 3$

$$10000 = P(1 + .04)^3$$
$$10000 = P(1.124864)$$
$$\frac{10000}{1.124864} = P$$
$$\$8,889.96 = P$$

4. $A = 40,000$
 $P = 20,000$
 $i = .08/4 = .02$

$$40000 = 20000(1.02)^n$$

$$\frac{40000}{20000} = 1.02^n$$

$$2 = 1.02^n$$

$$\log 2 = \log 1.02^n$$

$$\log 2 = n(\log 1.02)$$

$$0.30103 = n(.0086002)$$

$$\frac{0.30103}{0.0086002} = n$$

$$35.002 = n$$

$$36 \text{ quarters or } \frac{36}{4} = 9 \text{ years}$$

$$5. P = 4,000$$

$$i = .07/1 = .07$$

$$n = 3$$

$$A = 4000(1.07)^3$$

$$A = 4000(1.22504)$$

$$A = \$4,900.16$$

$$6. A = 3$$

$$P = 2$$

$$i = .025$$

$$3 = 2(1.025)^n$$

$$\frac{3}{2} = 1.025^n$$

$$1.5 = 1.025^n$$

$$\log 1.5 = \log 1.025^n$$

$$\log 1.5 = n(\log 1.025)$$

$$0.1760913 = n(0.0107239)$$

$$\frac{0.1760913}{0.0107239} = n$$

$$16.4 = n$$

17 years

$$7. P = 10,000$$

$$i = .09/12 = .0075$$

$$n = (3)(12) = 36$$

$$A = 10000(1.0075)^{36}$$

$$A = 10000(1.30865)$$

$$A = \$13,086.50$$

$$8. A = 5,000$$

$$i = .06/4 = .015$$

$$n = 4 \times 5 = 20$$

$$5000 = P(1.015)^{20}$$

$$5000 = P(1.34685)$$

$$\frac{5000}{1.34685} = P$$

$$\$3,712.37 = P$$

9. $A = 2$

$$P = 1$$

$$i = .03/12 = .0025$$

$$2 = 1(1.0025)^n$$

$$2 = 1.0025^n$$

$$\log 2 = \log 1.0025^n$$

$$\log 2 = n (\log 1.0025)$$

$$0.30103 = n(0.0010844)$$

$$\frac{0.30103}{0.0010844} = n$$

$$277.6 = n$$

$$278 \text{ months or } \frac{278}{12} = 23 \text{ years and 2 months}$$

10. $P = 20,000$

$$i = .03/12 = .0025$$

$$n = 10$$

$$A = 20000(1.0025)^{10}$$

$$A = 20000(1.02528)$$

$$A = \$20,505.60$$