

Instructions: Show all work. Use exact answers unless specifically asked to round. Be sure to complete all parts of each problem.

1. Find the simple interest owed for four years on \$5400 at 7% interest.

$$5400 * .07 * 4 = \$1512$$

2. Find the effective rate for a loan at 4% interest compounded monthly.

$$\left(1 + \frac{.04}{12}\right)^{12} - 1 = 4.074\%$$

3. Find the future value for \$6000 invested at 5% compounded:

a. Weekly

$$N = 52$$

$$P/Y = C/Y = 52$$

for one year

$$PV = 6000$$

$$I\% = 5\%$$

$$PMT = 0$$

$$FV = \$6307.48$$

b. Annually

$$N = 1$$

$$P/Y = C/Y = 1$$

$$FV = \$6300$$

c. Continuously

$$A = 6000e^{.05(1)} = \$6307.63$$

4. You have a credit card balance of \$4328, and are being charged 19.9% annual interest. What is the interest charged, and the balance owed next month?

$$4328 \left(1 + \frac{.199}{12}\right) = 4399.77 \text{ balance owed}$$

$$\text{interest charged } \$71.77$$

$$I = Prt$$

$$A = P \left(1 + \frac{r}{n}\right)^{nt}$$

$$r_{\text{eff}} = \left(1 + \frac{r}{n}\right)^n - 1$$

$$A = Pe^{rt}$$

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