<u>Answers</u>

<u>Compound Interst – Day #2</u>

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

$A = 6300\left(1 + \dfrac{0.016}{24}\right)^{24(6)}$

$A = 6300\left(1.0006\right)^{144}$

$A = 6300\left(1.100726856\right)$

$A = ^{\#}6934.56$

2. $A = 2500\left(1 + \dfrac{0.042}{2}\right)^{2(5)}$

$A = 2500\left(1.021\right)^{10}$

$A = 2500\left(1.230998208\right)$

$A = ^{\$}3077.50$ $3077.50 - 2500 = ^{\#}577.50$

$$A = 2500 \left(1.230998208 \right)$$

$$A = \$3077.50 \qquad\qquad 3077.50 - 2500 = \underline{577}$$

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

$$2000 = P \left(1 + \frac{0.062}{12} \right)^{12(2)}$$

$$2000 = P \left(1.0051\bar{6} \right)^{24}$$

$$\frac{2000}{1.13165455} = \frac{P \left(1.13165455 \right)}{1.13165455}$$

$$P = \underline{1767.32}$$

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

$A = 3500\left(1 + \dfrac{0.005}{26}\right)^{(26)(6)}$

$A = 3500\left(1.000192307\right)^{156}$

$A = 3500\left(1.030451562\right)$

$A = \$3606.58$

0.5%
$\div 100$
0.005

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

$A = 5000\left(1 + \dfrac{0.075}{1}\right)^{(1)(10)}$

$A = 5000\left(1.075\right)^{10}$

$A = 5000\left(2.061031562\right)$

$A = 10305.16$ $\$5305.16$

$A = 5000 (1.075)$

$A = 5000 (2.061031562)$

$A = \underline{10305.16}$ $\$5305 \cdot 16$

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

$7500 = P\left(1 + \dfrac{0.018}{52}\right)^{(52)(5)}$

$7500 = P\left(1.000346154\right)^{260}$

$7500 = P\left(1.09457244\right)$

1.09457244 $\$$ 1.09457244

$P = \$\,\underline{6854.59}$

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

$A = 4200\left(1 + \dfrac{0.0005}{365}\right)^{(365)(10)}$

$A = 4200\left(1.00000137\right)^{3650}$

$A = 4200\left(1.0050125517\right)$

$A = \underline{\underline{4221.05}}$

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

$A = 6400\left(1 + \dfrac{0.062}{2}\right)^{(2)(5)}$

$A = 6400\left(1.031\right)^{10}$

$A = 6400\left(1.357021264\right)$

$A = \underline{\$8684.94}$

$8684.94 - 6400 = \boxed{\$2284.94}$

Michael wants to invest $7200.
His bank offers an investment option
that earns <mark>simple interest</mark> at a rate of
5.2% per year. If Michael makes $352 in
interest, how long did he invest the
money?

$I = 352$
$P = 7200$
$r = 0.052$
$t = ?$

$I = Prt$

$352 = 7200\,(0.052)\,t$

$\dfrac{352}{374.4} = \dfrac{374.4\,t}{374.4}$

$t = 0.94 \text{ years.}$

Calculate the final value of an initial investment of $8500. Interest is paid at 3.8% per annum, compounded semi-annually, for three years.

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

$A = ?$

$P = 8500$

$r = 0.038$

$n = 2$

$t = 3$

$A = 8500\left(1 + \frac{0.038}{2}\right)^{(2)(3)}$ ← 6

$A = 8500\left(1.019\right)^{6}$

$A = \$9516.21$