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

Find the final amount for each investment.

1. Invested $1300 earning 5% interest per annum compounded annually for 10 years.

$A = 1300\left(1 + \frac{.05}{1}\right)^{10}$ $2117.56

2. Invested $850 earning 4% interest per annum compounded annually for 6 years.

$A = 850\left(1 + \frac{.04}{1}\right)^{6}$ $1075.52

3. Invested $720 earning 6.2% interest per annum compounded semiannually for 5 years.

$A = 720\left(1 + \frac{.062}{2}\right)^{10}$ $977.06

4. Invested $1100 earning 5.5% interest per annum compounded semiannually for 4 years.

$A = 1100\left(1 + \frac{.055}{2}\right)^{8}$ $1366.62

5. Invested $300 earning 4.5% interest per annum compounded quarterly for 3 years.

$A = 300\left(1 + \frac{.045}{4}\right)^{12}$ $343.10

6. Invested $1000 earning 6.5% interest per annum compounded quarterly for 2 years.

$A = 1000\left(1 + \frac{.065}{4}\right)^{8}$ $1137.64

7. Invested $5000 earning 6.3% interest per annum compounded monthly for 10 years.

$A = 5000\left(1 + \frac{.063}{12}\right)^{120}$ $9372.59

8. Invested $2000 earning 5.5% interest per annum compounded daily for 3 years.

$A = 2000\left(1 + \frac{.055}{365}\right)^{(365 \cdot 3)}$ $2358.76

9. Bill and Susan's parents want to open a college savings account for their grandchild. They have found an investment that pays 8% annual interest, compounded monthly. How much money will they need to invest in order to have $60,000 in the account 18 years after their grandchild is born? Round your answer to the nearest dollar.

$60{,}000 = a\left(1 + \frac{.08}{12}\right)^{(18 \cdot 12)}$ * Solve for a

$a = \$14{,}283.76$

10. The half-life of plutonium-238 is about 88 years. The amount A (in grams) of radioactive plutonium-238 that remains in a sample after t years is given by $A = 10(.5)^{\frac{t}{88}}$.

If the original amount of plutonium-238 is 10 grams, how much of the sample will remain

a) after 88 years? $A = 10(.5)^{\frac{88}{88}}$ 5 grams

b) after 176 years? $A = 10(.5)^{\frac{176}{88}}$ 2.5 grams

c) after 100 years? $A = 10(.5)^{\frac{100}{88}}$ 4.5 grams