Calculate the final value of an initial investment of $7500.00. Interest is paid at 3.8% per annum, compounded quarterly, for 4 years.

A = final value of the investment ...(principal + interest)
P = principal
r = annual interest rate
n = number of compounding periods in a year
t = term of the investment or loan in number of years

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

$A = ?$
$P = 7500$
$r = 0.038$
$n = 4$
$t = 4$

$A = 7500\left(1 + \frac{0.038}{4}\right)^{4(4)}$

$A = 7500\left(1.0095\right)^{16}$

$A = 7500\left(1.163325\right)$

$A = 8724.94$

Jennifer wants to invest $3900.00. Interest is paid at 4% per annum, compounded semi-annually, for 5 years. How much interest would Jennifer make on her investment?

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

$A = ?$
$P = 3900$
$r = 0.04$
$n = 2$
$t = 5$

$A = 3900\left(1 + \frac{0.04}{2}\right)^{(2)(5)}$

$A = 3900(1.02)^{10}$

$A = 3900(1.21899442)$

$A = 4754.08$

$4754.08 - 3900$

Interest $= 854.08$

Ava wants to have $3000.00 in two years to go on a school trip. Her bank offers an investment option that earns interest compounded semi-annually at a rate of 3%. How much money would Ava need to invest?

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

$A = 3000$
$P = ?$
$r = 0.03$
$n = 2$
$t = 2$

$3000 = P\left(1 + \frac{0.03}{2}\right)^{(2)(2)}$ $= 4$

$3000 = P(1.015)^4$

$\frac{3000}{1.061363} = \frac{P(1.061363)}{1.061363}$

$P = 2826.55$

Will wants to have $10,000 in 3 years to go on a graduation trip. His bank offers an investment option that earns interest compounded quarterly at a rate of 5.25%. How much money would Will need to invest today?

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