Answer each of the following questions. You must show your work in order to receive partial credit.

The principal P is borrowed at simple interest rate \( r \) for a period of time \( t \). Find the simple interest owed for the use of the money. Assume 360 days in a year and round answer to the nearest cent.

1) \( P = 900.00 \)
   \( r = 4\% \)
   \( t = 9 \) months

\[
I = P \cdot r \cdot t
= 900 \cdot (0.04) \cdot \left( \frac{9}{12} \right)
= 27
\]

Determine the present value, \( P \), you must invest to have the future value, \( A \), at simple interest rate \( r \) after time \( t \). Round answer to the nearest dollar.

2) \( A = 217.60, \ r = 7\%, \ t = 4 \) years

\[
217.60 = P \cdot (1 + \frac{r}{n})^n
\]

\[
P = \frac{217.60}{\left(1 + \frac{0.07}{4}\right)^{4\cdot 4}}
= 170
\]

The principal represents an amount of money deposited in a savings account subject to compound interest at the given rate. Find how much money will be in the account after the given number of years (Assume 360 days in a year.), and how much interest was earned.

3) Principal: \$8000
   Rate: 7%
   Compounded: semiannually
   Time: 3 years

\[
A = P \cdot (1 + \frac{r}{n})^n \cdot t
= 8000 \cdot (1 + \frac{0.07}{2})^{2\cdot 3}
= 9834.04
\]

\[
I = A - P
= 9834.04 - 8000
= 1834.04
\]

Solve the problem.

4) How much money should be deposited today in an account that earns 11% compounded quarterly so that it will accumulate to \$5300 in 11 years?

\[
P = \frac{5300}{\left(1 + \frac{0.11}{4}\right)^{4\cdot 11}} = 16060.48
\]

Solve the problem. Round to the nearest tenth of a percent.

5) A passbook savings account has a rate of 7%. Find the effective annual yield if the interest is compounded monthly.

\[
\gamma = \left(1 + \frac{0.07}{12}\right)^{12} - 1
= 7.2370
\]