Section 5.2 - Compound Interest

Instructions
Please work all homework questions and clearly label / place your answers in the boxes (or parenthesis) provided. If you have questions, please feel free to email me at Joshua.Patterson@tamuc.edu

1. Find the periodic rate that corresponds to the given compound rate, if the rate is compounded as follows. (Round your answers to eight decimal places.)

17%
(a) quarterly
(b) monthly
(c) daily
(d) biweekly (every two weeks)
(e) semimonthly (twice a month)

2. Find the number of periods that corresponds to the given time span, if a period is a quarter of a year, a month, and a day. (Ignore leap years.)

3 \frac{1}{4} years
(a) a quarter of a year
(b) a month
(c) a day

3. Find the number of periods that corresponds to the given time span, if a period is a quarter of a year, a month, and a day. (Ignore leap years.)

35 years
(a) a quarter of a year
4. Question Details

Consider the following investment. (Round your answers to the nearest cent.)

$3,000 at 7% compounded annually for 12 years

(a) Find the future value of the given amount.

(b) Interpret the future value of the given amount.

   After 12 years, the investment is worth $___.

5. Question Details

Consider the following investment. (Round your answers to the nearest cent.)

$5,800 at 6\frac{3}{4} % compounded quarterly for 9\frac{1}{2} years

(a) Find the future value of the given amount.

(b) Interpret the future value of the given amount.

   After 9\frac{1}{2} years, the investment is worth $___.

6. Question Details

Consider the following nominal rate. (Round your answers to two decimal places.)

7% compounded monthly

(a) Find the annual yield corresponding to the given nominal rate.

(b) Interpret the annual yield corresponding to the given nominal rate.

   The given compound rate is equivalent to ___% simple interest.

7. Question Details

Consider the given nominal rate. (Round your answers to two decimal places.)

14\frac{5}{8} % compounded daily

(a) Find the annual yield corresponding to the given nominal rate.

(b) Interpret the annual yield corresponding to the given nominal rate.

   The given compound rate is equivalent to ___% simple interest.
8. Find and interpret the annual yield corresponding to the given nominal rate. (Round your answers to two decimal places.)

10%

(a) compounded quarterly
The given compound rate is equivalent to ____% simple interest.

(b) compounded monthly
The given compound rate is equivalent to ____% simple interest.

(c) compounded daily
The given compound rate is equivalent to ____% simple interest.

9. Consider the following future value. (Round your answers to the nearest cent.)

$2,000 at 8% compounded annually for 9 years

(a) Find the present value that will generate the given future value. $ ______

(b) Interpret the present value.
One would have to invest $ ______ now to have the future value in the given time.

10. Consider the following future value. (Round your answers to the nearest cent.)

$4,481 at 10 \frac{3}{4} % compounded quarterly for 4 years

(a) Find the present value that will generate the given future value. $ ______

(b) Interpret the present value.
One would have to invest $ ______ now to have the future value in the given time.

11. An **Individual Retirement Account (IRA)** is an account in which the saver does not pay income tax on the amount deposited but is not allowed to withdraw the money until retirement. (The saver pays income tax at that point, but his or her tax bracket is much lower then.)

Marlene Silva wishes to have an IRA that will be worth $100,000 when she retires at age 65. (Round your answers to the nearest cent.)

(a) How much must she deposit at age 33 at 8 \frac{3}{8} % compounded daily? $ ______

(b) If, at age 65, she arranges for the monthly interest to be sent to her, how much will she receive each thirty-day month? $ ______