

Name:

13. Which will deliver a higher future value after two years, a deposit of \$500 attracting interest at 10% compounded daily, or at 10.5% compounded annually?

(a) For 10% daily compounding, the value after two years is:

\$

(b) For 10.5% annually compounding, the value after two years is:

\$

The value is higher for

☐

(a)

☐

(b)

14. What initial investment subject to annual compounding at 10% is needed to earn \$500 in interest after two years?

The initial investment needed is

\$

15. How much can you borrow if the interest rate is 15% (a.c.), you can afford to pay \$10,000 at the end of each year, and you want to clear the loan in 10 years?

We can borrow

\$

16. Suppose that you deposit \$1,000 at the end of each year for 40 years, subject to annual compounding at a constant rate of 5%. Find the balance after 40 years.

The balance after 40 years is

\$

17. An investor receives \$1,150 in one year in return for an investment of \$1,000 now. Calculate the percentage return per annum with (a) annual, (b) semiannual, (c) monthly, (d) daily, (e) continuous compounding.

(a)

%

(b)

%

(c)

%

(d)

%

18. What will be the difference between the value after one year of \$100 deposited at 10% compounded monthly and compounded continuously? Find all frequencies m such that the difference between the value after one year of \$100 deposited at 10% compounded periodically with frequency m and compounded continuously is less than 1 cent.

(a) For 10% monthly,
the value after one years is:

\$

(b) For 10% continuously,
the value after one years is:

\$

(c) Difference between value
in (b) and value in (a) is:

¢

(d) Integer value of m so that the difference
is less than 1¢ (but bigger than 1¢ for $m - 1$):

$m =$

19. An interest rate is quoted as 5% per annum with semiannual compounding. What is the equivalent rate with (a) annual, (b) monthly, and (c) continuous compounding?

(a)

%

(c)

%

(b)

%