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Chapter 8 Test

1. A $5000 investment will grow to $7000 most quickly at
A 6.5% per year, compounded annually
B 6% per year, compounded semi-annually
C 5% per year, compounded monthly
D 4.5% per year, compounded weekly

2. How much should be invested now at 6% per year, compounded quarterly, to have $125 000 in 15 years?
A $51 162 **B** $305 402.47
C $52 158.13 **D** $99 981.44

3. Values are substituted into the compound interest formula. What value does x represent in the equation $2000 = x(1.02)^4$?
A present value
B future value
C quarterly rate of interest
D compounded interest

4. A $3200 investment that pays semi-annual interest will grow to $3603.72 in 3 years at an annual rate of
A 2% **B** 4%
C 6% **D** 8%

For questions 5 to 7, answer true (T) or false (F).

5. The equivalent annual interest rate of a 6% investment compounded quarterly is 2%.

6. An investment of $2300 at 2.8% per year, compounded semi-annually, will be worth $2640.54 in 5 years.

7. An investment of $1500 at 3% per year, compounded annually, for 4 years will earn more than at 4% per year, compounded semi-annually, for 3 years.

8. Alasdair has $4000 to invest. He has a choice of two plans.
Plan A: 6.5% simple interest
Plan B: 6.5% per year, compounded yearly
a) Which plan should he choose?
b) How much more interest would he earn with the plan from part a) if he invests for
i) 2 years
ii) 6 years

9. Leah invested $2200 at 4.5% per year, compounded annually, for 5 years. Alex had $2200 in a simple interest account for 5 years and earned the same amount of interest as Leah. What was the annual rate of interest on Alex's account?

10. Use the formula $A = P(1 + i)^n$ to evaluate each amount.
a) $650 at 4.4% per year, compounded quarterly, for 7 years
b) $1725 at 6% per year, compounded semi-annually, for 2 years
c) $8000 at 8% per year, compounded monthly, for 4 years
d) $12 300 at 4% per year, compounded daily, for 6 years

11. Determine the present value of each amount.
a) $1200 needed in 2 years, invested at 4% per year, compounded annually
b) $550 needed in one year, invested at 2% per year, compounded quarterly
c) $3225 needed in 12 years, invested at 4% per year, compounded monthly
d) $6720 needed in 4 years, invested at 7% per year, compounded semi-annually

12. Kathy borrows $3300 in her first year of college. How much will she owe at the end of 3 years if her loan is at 4% per year, compounded weekly?

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13. A $750 investment earns 6% per year, compounded monthly. How much interest will the investment earn in the
a) third year?
b) seventh year?

14. Find the value of a $3150 investment after 2 years at 4% per year, compounded
a) annually
b) semi-annually
c) quarterly
d) monthly
e) weekly

15. A $5000 investment pays 4.8% per year, compounded quarterly, for 10 years. Make a table of values and sketch a graph of the investment's growth.