

Module 4(Compound Interest)

- 1) Calculate the compound amount. Use the compound amount formula and a calculator. (Round your answer to two decimal places.)

$$P = \$500, r = 5\% \text{ compounded quarterly, } t = 5 \text{ years}$$

- (a) \$563.35
 - (b) \$643.35
 - (c) \$500.35
 - (d) \$641.02
- 2) Calculate the future value. (Round your answer to two decimal places.)

$$P = \$4600, r = 10\% \text{ compounded semiannually, } t = 14 \text{ years}$$

- (a) \$20980.54
 - (b) \$18032.59
 - (c) \$13206.60
 - (d) \$14587.60
- 3) A couple plans to save for their child's college education. What principal must be deposited by the parents when their child is born in order to have \$44,000 when the child reaches the age of 18? Assume the money earns 7% interest, compounded quarterly. (Round your answer to two decimal places.)

- (a) \$12617.54
- (b) \$12367.43
- (c) \$13450.50
- (d) \$15860.60

- 4) How much money should be invested in an account that earns 9% interest, compounded monthly, in order to have \$11,000 in 5 years? (Round your answer to two decimal places.)
- (a) \$3256.18
 - (b) \$6423.16
 - (c) \$5436.12
 - (d) \$7025.70
- 5) How many times per year is interest compounded if it is compounded quarterly?
- (a) 360
 - (b) 12
 - (c) 4
 - (d) 2
- 6) In general, an increase in the number of compounding periods results in _____ in the interest earned by an account.
- (a) Doubling
 - (b) an increase
 - (c) halving
 - (d) a decrease
- 7) In the formula $A = P \left(1 + \frac{r}{n}\right)^{nt}$, n represents
- (a) the principal
 - (b) the annual interest rate
 - (c) the number of years
 - (d) the number of compounding periods per year

8) Use the compound interest formula to determine the value of an investment of \$1,200 invested at a rate of 4.3%, compounded monthly, after 3 years.

(a) \$1,364.91

(b) \$73,690,269.85

(c) \$1,212.95

(d) \$2,003.02

9) Find the effective interest rate of an account with a nominal rate of 4.3%, compounded monthly.

(a) 4%

(b) 4.38%

(c) 4.3%

(d) 4.21%

10) Which of the following is the better investment?

A. An account that earns 6.5% interest compounding annually

B. An account that earns 6.4% interest compounding quarterly

(a) Option A

(b) Option B

11) Calculate the compound amount. Use the compound amount formula and a calculator. (Round your answer to two decimal places.)

$P = \$9700$, $r = 9\%$ compounded daily, $t = 4$ years

(a) 13,902.67

(b) 13,602.64

(c) 13,402.64

(d) 13,702.67

(12) Calculate the future value. (Round your answer to two decimal places.)

$$P = \$24000, r = 5\% \text{ compounded monthly, } t = 6 \text{ years}$$

- (a) \$20980.54
- (b) \$32376.43
- (c) \$13206.60
- (d) \$14587.60

(13) Calculate the present value. (Round your answer to two decimal places.)

$$P = \$35000, r = 6\% \text{ compounded monthly, } t = 3 \text{ years}$$

- (a) \$21980.54
- (b) \$16032.59
- (c) \$29347.57
- (d) \$14587.60

(14) Calculate the present value. (Round your answer to two decimal places.)

$$P = \$43000, r = 7.3\% \text{ compounded annually, } t = 32 \text{ years}$$

- (a) \$4511.05
- (b) \$8032.59
- (c) \$13206.60
- (d) \$14587.60

(15) Calculate the compound amount when \$9300 is deposited in an account earning 8% interest, compounded daily, for 5 years. (Round your answer to two decimal places.)

- (a) \$13980.54
- (b) \$13032.59
- (c) \$12347.57
- (d) \$13873.35

(16) What is the future value of \$29000 earning 9% interest, compounded monthly, for 7 years?
(Round your answer to two decimal places.)

(a) \$53980.54

(b) \$54322.86

(c) \$54347.54

(d) \$52873.35

(17) How much money should be invested in an account that earns 7% interest, compounded monthly in order to have \$15,000 in 7 years? (Round your answer to two decimal places.)

(a) \$7980.54

(b) \$6032.59

(c) \$9347.57

(d) \$9202.49

Answer Key:

1. d
2. b
3. a
4. d
5. c
6. b
7. d
8. a
9. b
10. a
11. a
12. b
13. c
14. a
15. d
16. b
17. d