

10.6 Practice - Compound Interest

Solve

- 1) Find each of the following:
 - a. \$500 invested at 4% compounded annually for 10 years.
 - b. \$600 invested at 6% compounded annually for 6 years.
 - c. \$750 invested at 3% compounded annually for 8 years.
 - d. \$1500 invested at 4% compounded semiannually for 7 years.
 - e. \$900 invested at 6% compounded semiannually for 5 years.
 - f. \$950 invested at 4% compounded semiannually for 12 years.
 - g. \$2000 invested at 5% compounded quarterly for 6 years.
 - h. \$2250 invested at 4% compounded quarterly for 9 years.
 - i. \$3500 invested at 6% compounded quarterly for 12 years.
 - j. All of the above compounded continuously.
- 2) What principal will amount to \$2000 if invested at 4% interest compounded semiannually for 5 years?

- 3) What principal will amount to \$3500 if invested at 4% interest compounded quarterly for 5 years?
- 4) What principal will amount to \$3000 if invested at 3% interest compounded semiannually for 10 years?
- 5) What principal will amount to \$2500 if invested at 5% interest compounded semiannually for 7.5 years?
- 6) What principal will amount to \$1750 if invested at 3% interest compounded quarterly for 5 years?
- 7) A thousand dollars is left in a bank savings account drawing 7% interest, compounded quarterly for 10 years. What is the balance at the end of that time?
- 8) A thousand dollars is left in a credit union drawing 7% compounded monthly. What is the balance at the end of 10 years?
- 9) \$1750 is invested in an account earning 13.5% interest compounded monthly for a 2 year period. What is the balance at the end of 9 years?
- 10) You lend out \$5500 at 10% compounded monthly. If the debt is repaid in 18 months, what is the total owed at the time of repayment?
- 11) A \$10,000 Treasury Bill earned 16% compounded monthly. If the bill matured in 2 years, what was it worth at maturity?
- 12) You borrow \$25000 at 12.25% interest compounded monthly. If you are unable to make any payments the first year, how much do you owe, excluding penalties?
- 13) A savings institution advertises 7% annual interest, compounded daily, How much more interest would you earn over the bank savings account or credit union in problems 7 and 8?
- 14) An 8.5% account earns continuous interest. If \$2500 is deposited for 5 years, what is the total accumulated?
- 15) You lend \$100 at 10% continuous interest. If you are repaid 2 months later, what is owed?



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Answers - Interest Rate Problems

1)

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|---------------------|---------------------|---------------------|
| a. 740.12; 745.91 | e. 1209.52; 1214.87 | i. 7152.17; 7190.52 |
| b. 851.11; 859.99 | f. 1528.02; 1535.27 | |
| c. 950.08; 953.44 | g. 2694.70; 2699.72 | |
| d. 1979.22; 1984.69 | h. 3219.23; 3224.99 | |

2) 1640.70

7) 2001.60

12) 28240.43

3) 2868.41

8) 2009.66

13) 12.02; 3.96

4) 2227.41

9) 2288.98

14) 3823.98

5) 1726.16

10) 6386.12

15) 101.68

6) 1507.08

11) 13742.19



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