

Compound Interest

Name: _____

Date: _____

Score: _____ / 18

Quick Review and Helpful Hints

Compound interest earns interest on the interest already earned. For yearly compounding, the amount is $A = P(1 + r)^t$, where P is the principal, r is the rate (as a decimal), and t is the number of years. The interest earned is $A - P$.

► **Example:** Find the amount on \$100 at 10% for 2 years (compounded yearly). **Work:** $A = 100(1.10)^2 = 100(1.21)$.

★ **Answer:** \$121



Interest grows on interest.

Practice Problems

Find the amount (or interest, where asked).

1. \$100 at 10%, 1 yr

8. \$1000 at 10%, 1 yr

2. \$100 at 10%, 2 yr

9. \$100 at 10%, 2 yr: interest only

3. \$200 at 10%, 1 yr

10. \$200 at 10%, 2 yr

4. \$100 at 20%, 1 yr

11. \$100 at 5%, 1 yr

5. \$100 at 100%, 1 yr

12. \$400 at 25%, 1 yr

6. \$500 at 10%, 1 yr

13. \$100 at 10%, 3 yr

7. \$100 at 50%, 1 yr

14. \$1000 at 100%, 1 yr

Word Problems

15. \$1000 grows at 10% for 2 years (yearly). Find the final amount.

16. \$100 grows at 10% for 2 years. How much interest is earned?

17. \$500 grows at 20% for 1 year. Find the amount.

18. \$200 grows at 50% for 1 year. Find the amount.



Answer Keys

1. \$110

2. \$121

3. \$220

4. \$120

5. \$200

6. \$550

7. \$150

8. \$1100

9. \$21

10. \$242

11. \$105

12. \$500

13. \$133.10

14. \$2000

15. \$1210

16. \$21

17. \$600

18. \$300

Step-by-Step Explanations

1. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $100(1.10) = \$110$. So the final answer is \$110.

2. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $100(1.10)^2 = 100(1.21) = \121 . So the final answer is \$121.

3. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $200(1.10) = \$220$. So the final answer is \$220.

4. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $100(1.20) = \$120$. So the final answer is \$120.

5. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $100(2.00) = \$200$. So the final answer is \$200.

6. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $500(1.10) = \$550$. So the final answer is \$550.

7. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $100(1.50) = \$150$. So the final answer is \$150.

8. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $1000(1.10) = \$1100$. So the final answer is \$1100.

9. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $121 - 100 = \$21$. So the final answer is \$21.

10. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $200(1.21) = \$242$. So the final answer is \$242.

11. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $100(1.05) = \$105$. So the final answer is \$105.

12. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $400(1.25) = \$500$. So the final answer is \$500.

13. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $100(1.10)^3 = 100(1.331) = \133.10 . So the final answer is \$133.10.

14. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $1000(2.00) = \$2000$. So the final answer is \$2000.

15. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $1000(1.10)^2 = 1000(1.21) = \1210 . So the final answer is \$1210.

16. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $121 - 100 = \$21$. So the final answer is \$21.

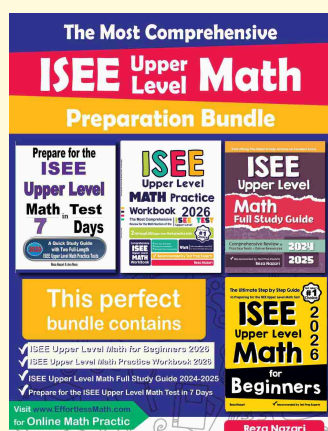
17. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $500(1.20) = \$600$. So the final answer is \$600.

18. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $200(1.50) = \$300$. So the final answer is \$300.



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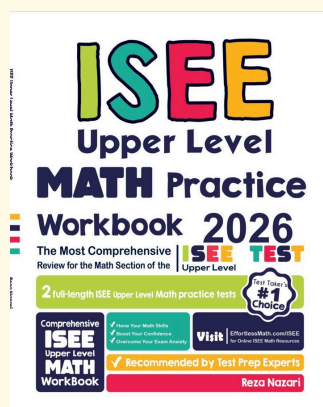
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