

# Simple Interest

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_ / 18

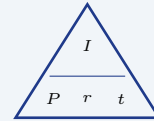
## Quick Review and Helpful Hints

Simple interest is  $I = P \cdot r \cdot t$ , where  $P$  is the principal (starting amount),  $r$  is the yearly rate written as a *decimal*, and  $t$  is the time in years. The total amount is  $A = P + I$ . Always change the percent rate to a decimal before multiplying.

► **Example:** Find the simple interest on \$500 at 4% for 3 years.

**Work:** Use  $I = Prt$  with  $r = 0.04$ :  $I = 500 \times 0.04 \times 3$ . Multiply step by step:  $500 \times 0.04 = 20$ , then  $20 \times 3$ .

★ **Answer:** \$60



$$I = P \times r \times t.$$

## ◆ Practice Problems

Find the simple interest  $I$ .

1.  $P = \$100$ ,  $r = 5\%$ ,  $t = 1$  yr \_\_\_\_\_

8.  $P = \$2000$ ,  $r = 2\%$ ,  $t = 5$  yr \_\_\_\_\_

2.  $P = \$200$ ,  $r = 10\%$ ,  $t = 2$  yr \_\_\_\_\_

9.  $P = \$400$ ,  $r = 10\%$ ,  $t = 3$  yr \_\_\_\_\_

3.  $P = \$1000$ ,  $r = 3\%$ ,  $t = 4$  yr \_\_\_\_\_

10.  $P = \$600$ ,  $r = 5\%$ ,  $t = 4$  yr \_\_\_\_\_

4.  $P = \$500$ ,  $r = 6\%$ ,  $t = 1$  yr \_\_\_\_\_

11.  $P = \$1200$ ,  $r = 6\%$ ,  $t = 2$  yr \_\_\_\_\_

5.  $P = \$800$ ,  $r = 5\%$ ,  $t = 2$  yr \_\_\_\_\_

12.  $P = \$300$ ,  $r = 4\%$ ,  $t = 5$  yr \_\_\_\_\_

6.  $P = \$1500$ ,  $r = 4\%$ ,  $t = 3$  yr \_\_\_\_\_

13.  $P = \$5000$ ,  $r = 3\%$ ,  $t = 1$  yr \_\_\_\_\_

7.  $P = \$250$ ,  $r = 8\%$ ,  $t = 1$  yr \_\_\_\_\_

14.  $P = \$900$ ,  $r = 10\%$ ,  $t = 2$  yr \_\_\_\_\_

## ◆ Word Problems

15. You deposit \$1000 at 5% simple interest for 3 years. How much interest do you earn? \_\_\_\_\_

16. A \$2000 loan is at 4% simple interest for 2 years. What is the total amount to repay? \_\_\_\_\_

17. How much interest does \$500 earn at 6% for 1 year? \_\_\_\_\_

18. A \$1500 investment earns 8% simple interest for 2 years. How much interest is that? \_\_\_\_\_



## Answer Keys

- |                                       |  |   |
|---------------------------------------|--|---|
| 1. <input type="text" value="\$5"/>   | 7. <input type="text" value="\$20"/>   | 13. <input type="text" value="\$150"/>  |
| 2. <input type="text" value="\$40"/>  | 8. <input type="text" value="\$200"/>  | 14. <input type="text" value="\$180"/>  |
| 3. <input type="text" value="\$120"/> | 9. <input type="text" value="\$120"/>  | 15. <input type="text" value="\$150"/>  |
| 4. <input type="text" value="\$30"/>  | 10. <input type="text" value="\$120"/> | 16. <input type="text" value="\$2160"/> |
| 5. <input type="text" value="\$80"/>  | 11. <input type="text" value="\$144"/> | 17. <input type="text" value="\$30"/>   |
| 6. <input type="text" value="\$180"/> | 12. <input type="text" value="\$60"/>  | 18. <input type="text" value="\$240"/>  |

### 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 Use  $I = Prt$ . Change 5% to 0.05, then multiply:  $100 \times 0.05 \times 1 = \$5$ . So the final answer is \$5.

**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  $I = 200 \times 0.10 \times 2$ . Step by step:  $200 \times 0.10 = 20$ , then  $20 \times 2 = \$40$ . So the final answer is \$40.

**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  $I = 1000 \times 0.03 \times 4 = 30 \times 4 = \$120$ . So the final answer is \$120.

**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  $I = 500 \times 0.06 \times 1 = \$30$ . So the final answer is \$30.

**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  $I = 800 \times 0.05 \times 2 = 40 \times 2 = \$80$ . So the final answer is \$80.

**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  $I = 1500 \times 0.04 \times 3 = 60 \times 3 = \$180$ . So the final answer is \$180.

**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  $I = 250 \times 0.08 \times 1 = \$20$ . So the final answer is \$20.

**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  $I = 2000 \times 0.02 \times 5 = 40 \times 5 = \$200$ . So the final answer is \$200.

**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  $I = 400 \times 0.10 \times 3 = 40 \times 3 = \$120$ . So the final answer is \$120.

**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  $I = 600 \times 0.05 \times 4 = 30 \times 4 = \$120$ . So the final answer is \$120.

**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  $I = 1200 \times 0.06 \times 2 = 72 \times 2 = \$144$ . So the final answer is \$144.

**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  $I = 300 \times 0.04 \times 5 = 12 \times 5 = \$60$ . So the final answer is \$60.

**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  $I = 5000 \times 0.03 \times 1 = \$150$ . So the final answer is \$150.

**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  $I = 900 \times 0.10 \times 2 = 90 \times 2 = \$180$ . So the final answer is \$180.

**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 Use  $I = Prt$ :  $1000 \times 0.05 \times 3 = 50 \times 3 = \$150$  interest. So the final answer is \$150.

**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 Interest is  $2000 \times 0.04 \times 2 = 80 \times 2 = \$160$ . The total to repay is  $2000 + 160 = \$2160$ . So the final answer is \$2160.

**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  $I = 500 \times 0.06 \times 1 = \$30$ . So the final answer is \$30.

**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  $I = 1500 \times 0.08 \times 2 = 120 \times 2 = \$240$ . So the final answer is \$240.



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