

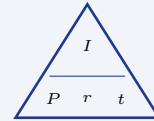
# Simple Interest

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  $I$ .

- |   |  |
|---|--|
| <p>1. <math>P = \\$100, r = 5\%, t = 1 \text{ yr}</math> _____</p> <p>2. <math>P = \\$200, r = 10\%, t = 2 \text{ yr}</math> _____</p> <p>3. <math>P = \\$1000, r = 3\%, t = 4 \text{ yr}</math> _____</p> <p>4. <math>P = \\$500, r = 6\%, t = 1 \text{ yr}</math> _____</p> <p>5. <math>P = \\$800, r = 5\%, t = 2 \text{ yr}</math> _____</p> <p>6. <math>P = \\$1500, r = 4\%, t = 3 \text{ yr}</math> _____</p> <p>7. <math>P = \\$250, r = 8\%, t = 1 \text{ yr}</math> _____</p> | <p>8. <math>P = \\$2000, r = 2\%, t = 5 \text{ yr}</math> _____</p> <p>9. <math>P = \\$400, r = 10\%, t = 3 \text{ yr}</math> _____</p> <p>10. <math>P = \\$600, r = 5\%, t = 4 \text{ yr}</math> _____</p> <p>11. <math>P = \\$1200, r = 6\%, t = 2 \text{ yr}</math> _____</p> <p>12. <math>P = \\$300, r = 4\%, t = 5 \text{ yr}</math> _____</p> <p>13. <math>P = \\$5000, r = 3\%, t = 1 \text{ yr}</math> _____</p> <p>14. <math>P = \\$900, r = 10\%, t = 2 \text{ yr}</math> _____</p> |
|---|--|

◆ **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. \$5   | 7. \$20   | 13. \$150  |
| 2. \$40  | 8. \$200  | 14. \$180  |
| 3. \$120 | 9. \$120  | 15. \$150  |
| 4. \$30  | 10. \$120 | 16. \$2160 |
| 5. \$80  | 11. \$144 | 17. \$30   |
| 6. \$180 | 12. \$60  | 18. \$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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