

# Finding Slope

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_ / 18

## Quick Review and Helpful Hints

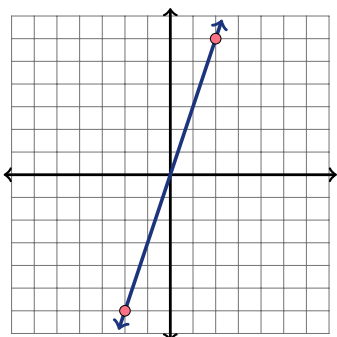
Slope measures steepness:  $m = \frac{y_2 - y_1}{x_2 - x_1}$ , or rise over run. Keep the subtraction order the same for  $y$  and  $x$ . Positive slopes rise, negative slopes fall, horizontal lines have slope 0, and vertical lines have undefined slope.

▶ **Example:** Find the slope of the line through  $(1, 2)$  and  $(4, 8)$ . **Work:** Use the formula:  $m = \frac{8-2}{4-1} = \frac{6}{3}$ . Simplify the fraction. ★ **Answer:**  $m = 2$

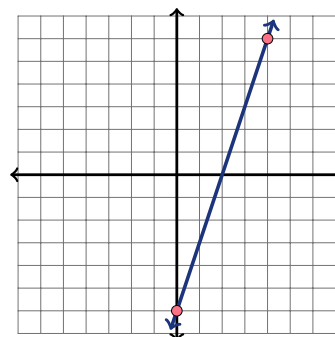
### Practice Problems

Find the slope. For graph questions, count rise over run; for point-pair questions, use the slope formula.

1. Use the graph to find the slope of the line.



2. Use the graph to find the slope of the line.



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| <p>3. <math>(2, 5)</math> and <math>(6, 5)</math> _____</p> <p>4. <math>(0, 1)</math> and <math>(4, 9)</math> _____</p> <p>5. <math>(1, 4)</math> and <math>(3, 0)</math> _____</p> <p>6. <math>(2, 3)</math> and <math>(5, 12)</math> _____</p> <p>7. <math>(-1, 2)</math> and <math>(1, 6)</math> _____</p> <p>8. <math>(0, 7)</math> and <math>(2, 1)</math> _____</p> | <p>9. <math>(3, 1)</math> and <math>(6, 7)</math> _____</p> <p>10. <math>(1, 1)</math> and <math>(5, 3)</math> _____</p> <p>11. <math>(-2, -3)</math> and <math>(2, 5)</math> _____</p> <p>12. <math>(4, 2)</math> and <math>(4, 9)</math> _____</p> <p>13. <math>(0, 5)</math> and <math>(3, 5)</math> _____</p> <p>14. <math>(2, 1)</math> and <math>(8, 5)</math> _____</p> |
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### Word Problems

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| <p>15. A ramp rises 3 feet over a horizontal run of 12 feet. What is its slope? _____</p> <p>16. A line passes through <math>(2, 3)</math> and <math>(5, 12)</math>. Find its slope. _____</p> | <p>17. A staircase rises 8 inches for every 10 inches forward. What is its slope? _____</p> <p>18. A road drops 50 feet over 200 horizontal feet. What is its slope? _____</p> |
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## Answer Keys

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### 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 Graph: rise 6, run 2, so  $m = 3$ . So the final answer is 3.

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 Graph: rise 6, run 2, so  $m = 3$ . So the final answer is 3.

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 Matching  $y$ -values give rise 0:  $m = \frac{0}{4} = 0$ . So the final answer is 0.

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  $m = \frac{0-1}{4-0} = \frac{-1}{4} = -\frac{1}{4}$ . So the final answer is  $-\frac{1}{4}$ .

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  $m = \frac{0-4}{3-1} = \frac{-4}{2} = -2$ . So the final answer is  $-2$ .

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  $m = \frac{12-3}{5-2} = \frac{9}{3} = 3$ . So the final answer is 3.

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  $m = \frac{6-2}{1-(-1)} = \frac{4}{2} = 2$ . So the final answer is 2.

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  $m = \frac{1-7}{2-0} = \frac{-6}{2} = -3$ . So the final answer is  $-3$ .

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  $m = \frac{7-1}{6-3} = \frac{6}{3} = 2$ . So the final answer is 2.

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  $m = \frac{3-1}{5-1} = \frac{2}{4} = \frac{1}{2}$ . So the final answer is  $\frac{1}{2}$ .

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  $m = \frac{5-(-3)}{2-(-2)} = \frac{8}{4} = 2$ . So the final answer is 2.

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 The  $x$ -values match, so the run is 0 and the slope is undefined. So the final answer is undefined.

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 Matching  $y$ -values give rise 0, so the slope is 0. So the final answer is 0.

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  $m = \frac{5-1}{8-2} = \frac{4}{6} = \frac{2}{3}$ . So the final answer is  $\frac{2}{3}$ .

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 Slope  $= \frac{3}{12} = \frac{1}{4}$ . So the final answer is  $\frac{1}{4}$ .

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  $m = \frac{12-3}{5-2} = \frac{9}{3} = 3$ . So the final answer is 3.

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 Slope  $= \frac{8}{10} = \frac{4}{5}$ . So the final answer is  $\frac{4}{5}$ .

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 The road drops, so rise is negative:  $m = \frac{-50}{200} = -\frac{1}{4}$ . So the final answer is  $-\frac{1}{4}$ .



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