

# Finding Slope

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

## Quick Review and Helpful Hints

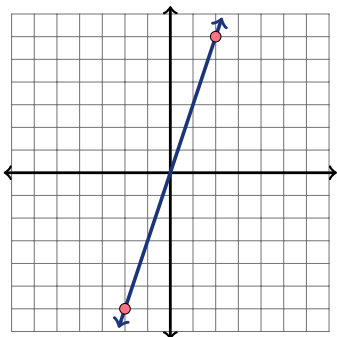
Slope measures steepness:  $m = \frac{y_2 - y_1}{x_2 - x_1}$ , or rise over run. Keep the subtraction order the same for  $y$  and  $x$ . Positive slopes rise, negative slopes fall, horizontal lines have slope 0, and vertical lines have undefined slope.

▶ **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:**  $m = 2$

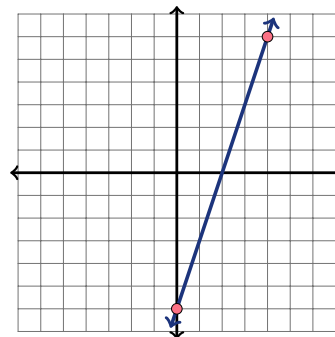
### Practice Problems

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.



3. (2, 5) and (6, 5) \_\_\_\_\_

9. (3, 1) and (6, 7) \_\_\_\_\_

4. (0, 1) and (4, 9) \_\_\_\_\_

10. (1, 1) and (5, 3) \_\_\_\_\_

5. (1, 4) and (3, 0) \_\_\_\_\_

11. (-2, -3) and (2, 5) \_\_\_\_\_

6. (2, 3) and (5, 12) \_\_\_\_\_

12. (4, 2) and (4, 9) \_\_\_\_\_

7. (-1, 2) and (1, 6) \_\_\_\_\_

13. (0, 5) and (3, 5) \_\_\_\_\_

8. (0, 7) and (2, 1) \_\_\_\_\_

14. (2, 1) and (8, 5) \_\_\_\_\_

### Word Problems

15. A ramp rises 3 feet over a horizontal run of 12 feet. What is its slope? \_\_\_\_\_

17. A staircase rises 8 inches for every 10 inches forward. What is its slope? \_\_\_\_\_

16. A line passes through (2, 3) and (5, 12). Find its slope. \_\_\_\_\_

18. A road drops 50 feet over 200 horizontal feet. What is its slope? \_\_\_\_\_



## Answer Keys

1.  $\boxed{3}$

2.  $\boxed{3}$

3.  $\boxed{0}$

4.  $\boxed{2}$

5.  $\boxed{-2}$

6.  $\boxed{3}$

7.  $\boxed{2}$

8.  $\boxed{-3}$

9.  $\boxed{2}$

10.  $\boxed{\frac{1}{2}}$

11.  $\boxed{2}$

12.  $\boxed{\text{undefined}}$

13.  $\boxed{0}$

14.  $\boxed{\frac{2}{3}}$

15.  $\boxed{\frac{1}{4}}$

16.  $\boxed{3}$

17.  $\boxed{\frac{4}{5}}$

18.  $\boxed{-\frac{1}{4}}$

### 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  $m = \frac{9-1}{4-0} = \frac{8}{4} = 2$ . So the final answer is 2.

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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