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.

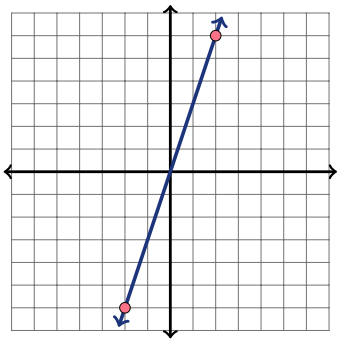
▷ **Example:** Find the slope of the line through $(1, 2)$ and $(4, 8)$. **Work:** Use the formula: $m = \frac{8-2}{4-1} = \frac{6}{3}$. Simplify the fraction.

★ **Answer:** $m = 2$

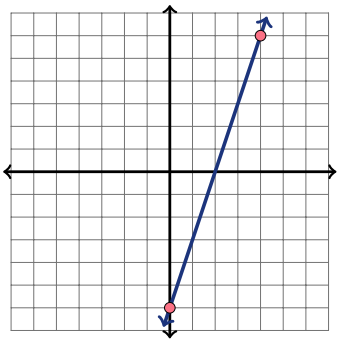
Practice Problems

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 $(6, 5)$ _____

4. $(0, 1)$ and $(4, 9)$ _____

5. $(1, 4)$ and $(3, 0)$ _____

6. $(2, 3)$ and $(5, 12)$ _____

7. $(-1, 2)$ and $(1, 6)$ _____

8. $(0, 7)$ and $(2, 1)$ _____

9. $(3, 1)$ and $(6, 7)$ _____

10. $(1, 1)$ and $(5, 3)$ _____

11. $(-2, -3)$ and $(2, 5)$ _____

12. $(4, 2)$ and $(4, 9)$ _____

13. $(0, 5)$ and $(3, 5)$ _____

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?

_____

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

_____

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

_____

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

_____

Answer Keys

1. 3
2. 3
3. 0
4. 2
5. -2
6. 3
7. 2
8. -3
9. 2
10. $\frac{1}{2}$
11. 2
12. undefined
13. 0
14. $\frac{2}{3}$
15. $\frac{1}{4}$
16. 3
17. $\frac{4}{5}$
18. $-\frac{1}{4}$

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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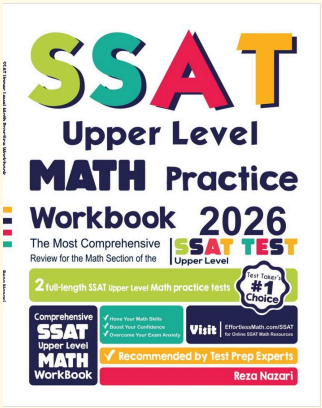

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