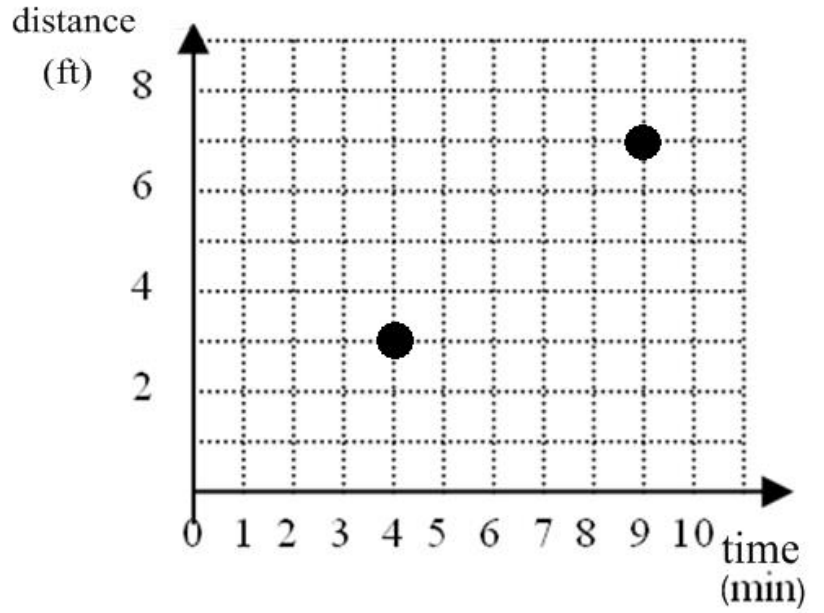


# 5.3 Slope (Rate of Change)

## ALGEBRA

Write your questions here!



SLOPE  $m =$

POINTS

(12, 16) and (-20, 4)



$x$	$y$
0	3
1	7
2	11
3	15
4	19



$x$	$y$
-2	22
1	17
4	12
7	7
10	2

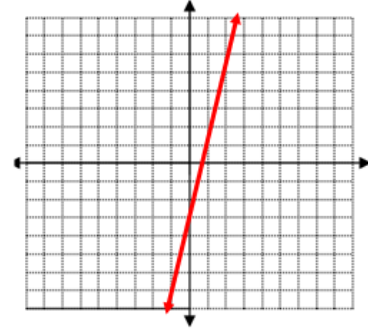
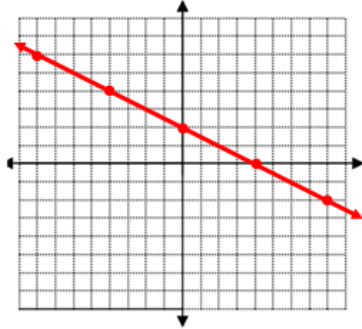


$x$	$y$
-8	6
4	12
14	17

# Find the Slope!

## EQUATIONS

### GRAPH

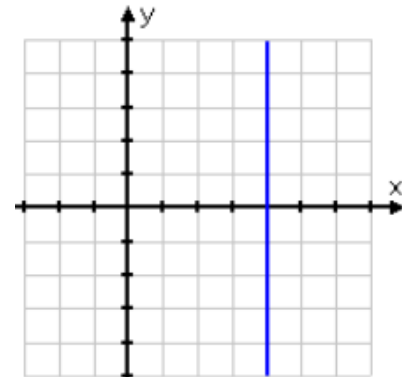
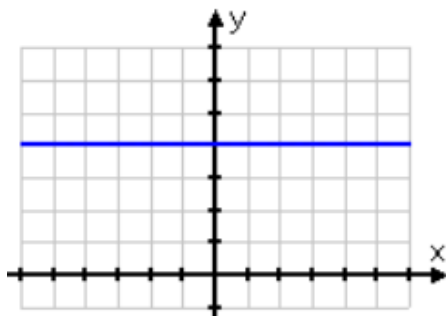
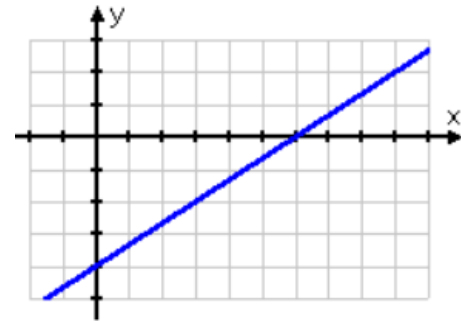
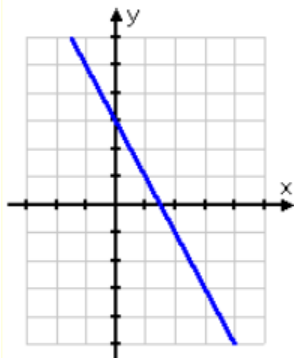


### VERBAL

Bob has 40 skittles. He eats 5 skittles every 3 minutes.

Sarah runs 3 miles every 24 minutes. She has already run 5 miles.

### Positive, Negative, Zero, and Undefined Slope

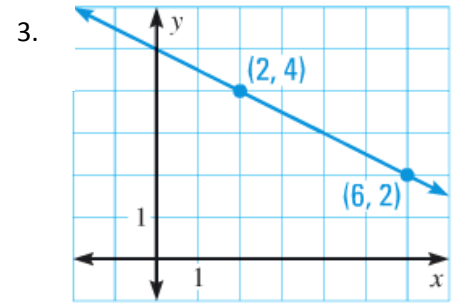
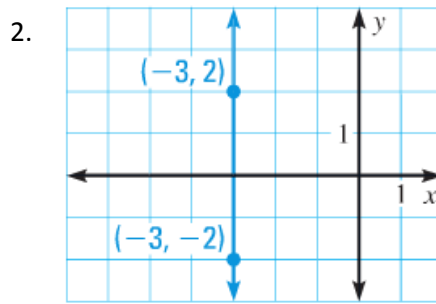
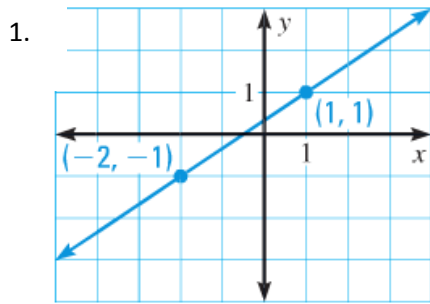


### SUMMARY:

Now,  
summarize  
your notes  
here!

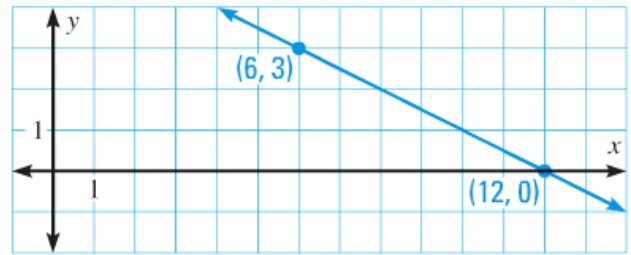


Tell whether the slope of the line is positive, negative, zero or undefined. Then find the slope if it exists.



4. **ERROR ANALYSIS** Describe and correct the error in calculating the slope of the line shown.

$$m = \frac{12 - 6}{0 - 3} = \frac{6}{-3} = -2$$



Find the slope of the line that passes through the points.

5. (-2, -1) and (4, 5)

6. (1, 3) and (3, -2)

7. (1, -3) and (7, 3)

8. (-9, 1) and (1, 1)

9. **★ MULTIPLE CHOICE** The slope of the line that passes through the points (-2, -3) and (8, -3) is     .

(A) positive

(B) negative

(C) zero

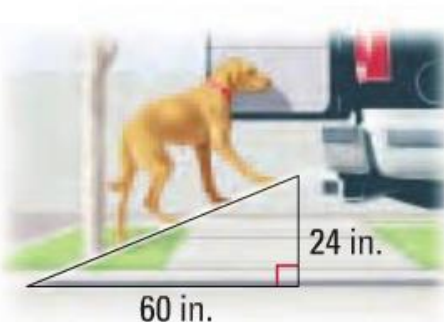
(D) undefined

Find the slope of the object.

10. Skateboard ramp



11. Pet ramp



12. Boat ramp



**Find the slope (rate of change) for the following.**

<p>13. Mr. Brust has 50 algebra books. He handouts 2 books every 3 days.</p> <p>Slope (rate of change) =</p> <p style="text-align: center;"><b>LABEL IT!</b></p>	<p>14. Bob makes 40 dollars a week. He already has 200 dollars.</p> <p>Slope (rate of change) =</p> <p style="text-align: center;"><b>LABEL IT!</b></p>	<p>15. <math>y = 7 + \frac{3}{2}x</math></p> <p>Slope (rate of change) =</p>																
<p>16. <math>y = -3x + 5</math></p> <p>Slope (rate of change) =</p>	<p>17.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th>x</th><th>y</th></tr> <tr><td>0</td><td>2</td></tr> <tr><td>1</td><td>11</td></tr> <tr><td>2</td><td>20</td></tr> </table> <p>Slope (rate of change) =</p>	x	y	0	2	1	11	2	20	<p>18.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th>x</th><th>y</th></tr> <tr><td>0</td><td>0</td></tr> <tr><td>2</td><td>1</td></tr> <tr><td>4</td><td>2</td></tr> </table> <p>Slope (rate of change) =</p>	x	y	0	0	2	1	4	2
x	y																	
0	2																	
1	11																	
2	20																	
x	y																	
0	0																	
2	1																	
4	2																	
<p>19.</p> <p>Slope (rate of change) =</p>	<p>20.</p> <p>Slope (rate of change) =</p>	<p>21.</p> <p>Slope (rate of change) =</p>																

**SKILLZ REVIEW**

<p style="text-align: center;"><b>GRAPH</b></p> <p>1. Describe how to move from point A to point B.</p> <p>_____ units in the y direction (rise)</p> <p>_____ units in the x direction (run)</p> <p>2. Describe how to move from point C(0,3) to point D(2, -3).</p>	<p style="text-align: center;"><b>SIMPLIFY</b></p> <p>3. <math>6(3x + 2) - 10</math></p>   <p>4. <math>5x - 3(4x + 1)</math></p>	<p style="text-align: center;"><b>SOLVE</b></p> <p>5. <math>8 - x = 12</math></p>   <p>6. <math>5x - 4 = 8x + 3</math></p>
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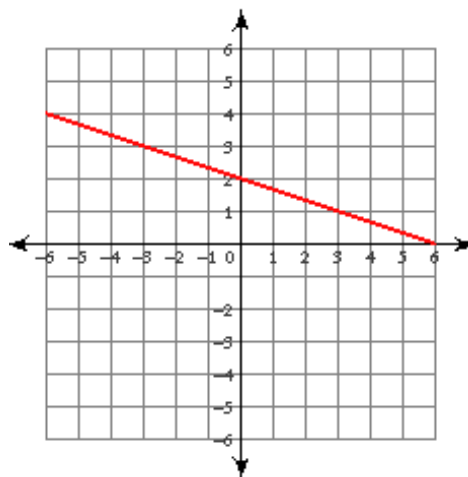
## 5.3 Slope (Rate of Change)

## APPLICATION

Find the slope of the following:

1.  $(-5, -7)$  and  $(14, -24)$

2.



Find the slope (rate of change) of the following and label your answer (like miles per hour)

3.

Time (seconds)	Profit (dollars)
3	18
5	25
7	32

$m =$

4.

Time (days)	Weight (grams)
-3	40
1	32
5	24

$m =$

5.

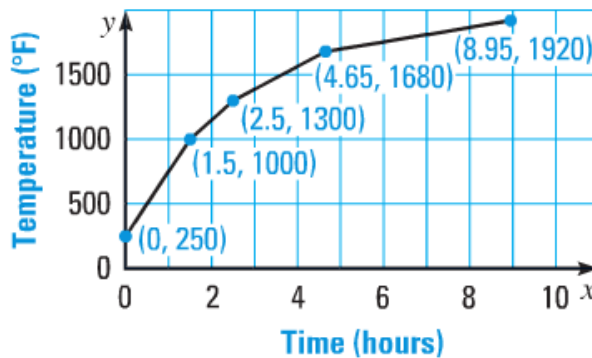
Age (years)	Height (cm)
5	80
15	120
20	140

$m =$

6. Firing a piece of pottery in a kiln takes place at different temperature for different amounts of time. The graph shows the temperature in a kiln while firing a piece of pottery (note: oven was preheated)

a. Determine the time interval during which the temperature in the kiln showed the greatest rate of change.

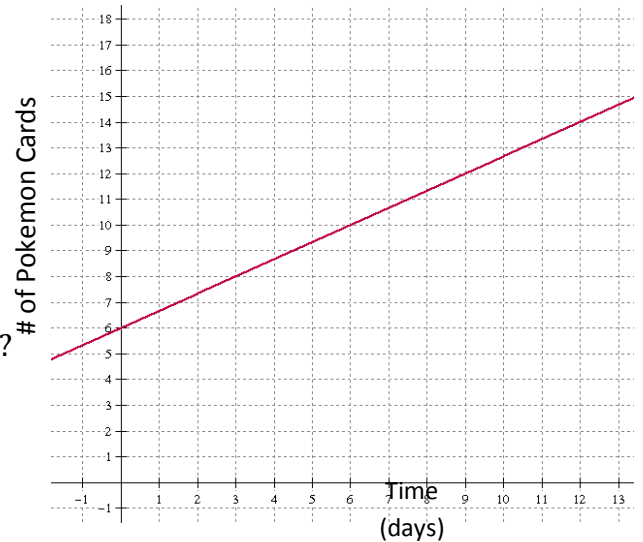
b. Determine the time interval during which the temperature in the kiln showed the least rate of change.



**Brust, Sully, and Kelly love to play Pokemon. Answer the following:**

**7. Mr. Brust's Pokémon cards are shown in the graph.**

- What is Mr. Brust's slope?
- What does his slope mean?  
(AKA describe his rate of change in sentence using labels.)
- How many cards does Mr. Brust have after 9 days?
- When will Mr. Brust have 12 cards?
- What is Mr. Brust y-intercept?



**8. Mr. Sullivan's Pokémon cards are shown in the table.**

- What is Mr. Sullivan's slope?
- What does his slope mean?  
(AKA describe his rate of change in sentence using labels.)
- What is Mr. Sullivan y-intercept?
- What does Mr. Sullivan y-intercept mean in this problem?

Time (days)	Cards #
0	20
2	16
4	12
6	8
8	4

**9. Mr. Kelly's Pokémon cards are determined by the equation.**

- What is Mr. Kelly's slope?
- What does his slope mean?  
(AKA describe his rate of change in sentence using labels.)
- How many cards will Mr. Kelly have in 40 days? SHOW WORK!
- When will Mr. Kelly have 8 cards? SHOW WORK!

$$y = \frac{2}{5}x + 2$$



**10. Look back at the Pokémon questions 7-9. Who is the best player? Explain why. Who is the worst player? Explain why**