

Warm Up

9/26

Go to Google Classroom to see the 3 items I would like you to upload.



What was the takeaway from this?

Take Aways:

- Keep track of your work
- Labels and Dates
- Make sure all work is complete
- Keep work organized
- Don't throw away handouts



You should have completed the
Diagnostic for today.



Assignments:

Will be posted in your IXL account each Tuesday.

The expectation is that you will work until you reach at least a score of 80.

Grading:	100	Mastery
	90	Advanced Proficient
	80	Proficient
	0	Not Completed

KEY

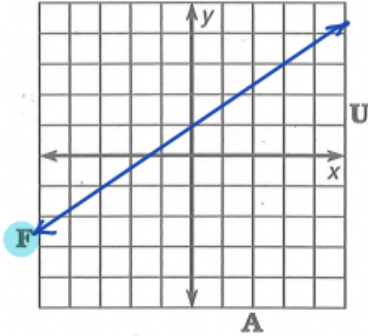
Homework Questions?



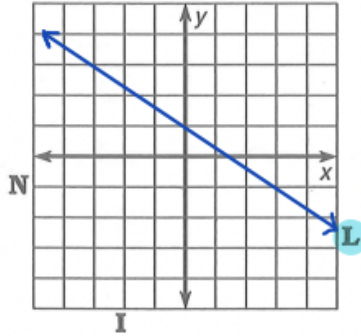
What happened to the Little Boy Who Swallowed a Silver Dollar?

Use the slope and y-intercept to graph each equation. The graph, if extended, will cross a letter outside the grid. Look for this letter in the string of letters at the bottom of the page and cross it out each time it appears. When you finish, write the remaining letters in the rectangle at the bottom of the page.

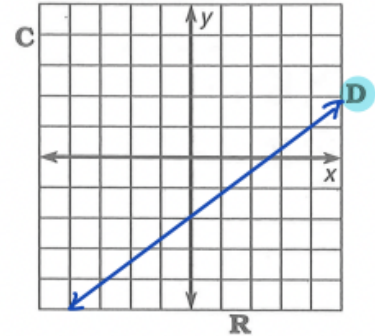
1 $y = \frac{2}{3}x + 1$



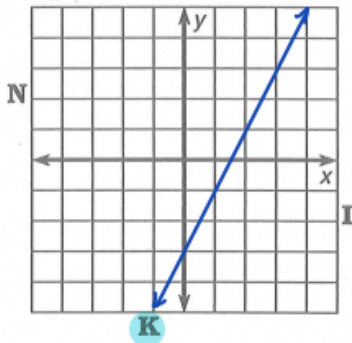
2 $y = -\frac{2}{3}x + 1$



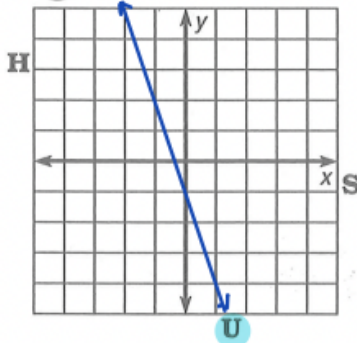
3 $y = \frac{3}{4}x - 2$



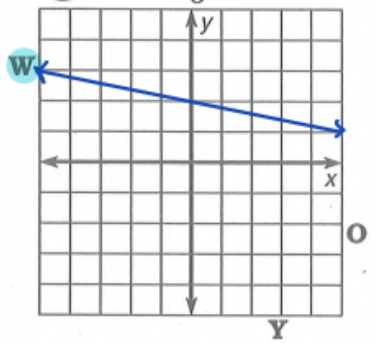
4 $y = 2x - 3$



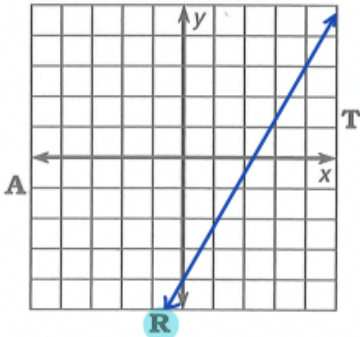
5 $y = -3x - 1$



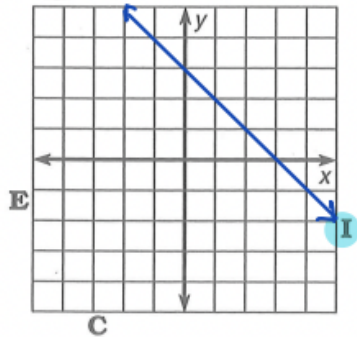
6 $y = -\frac{1}{5}x + 2$



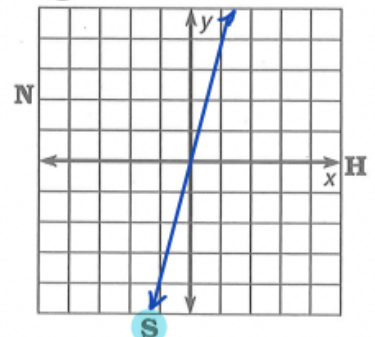
7 $y = \frac{7}{4}x - 4$



8 $y = -x + 3$



9 $y = 4x$



R I N D S O C K W H I F R A N U L I G E Y W E D S T

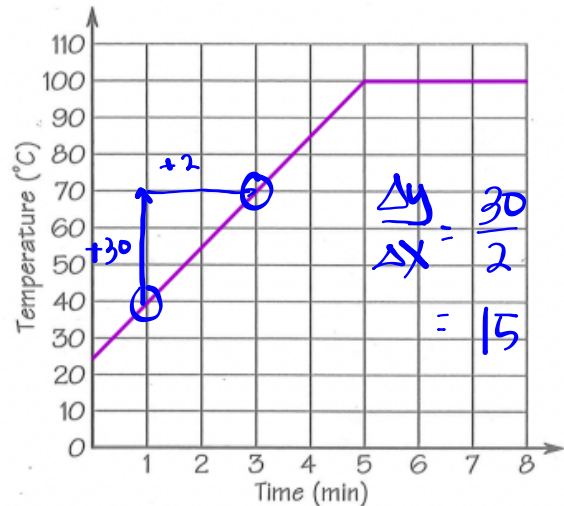
answer to puzzle: NO CHANGE YET

FUNction graFUN

Boiling Water. A pot of water at a temperature of 25°C is placed on a hot burner. The temperature of the water increases at a rate of 15° per minute until it boils at 100°C. The water continues boiling at this temperature.

- Complete the graph to show the relationship between water temperature (y) and time since the water was placed on the burner (x).
- How long does it take for the water to boil?
5 minutes
- What is the slope of the graph for temperatures between 25°C and 100°C?
15 degrees/minute
- What is the slope of the graph after the temperature reaches 100°C?
slope = 0
- Write an equation for the part of the graph that has positive slope.

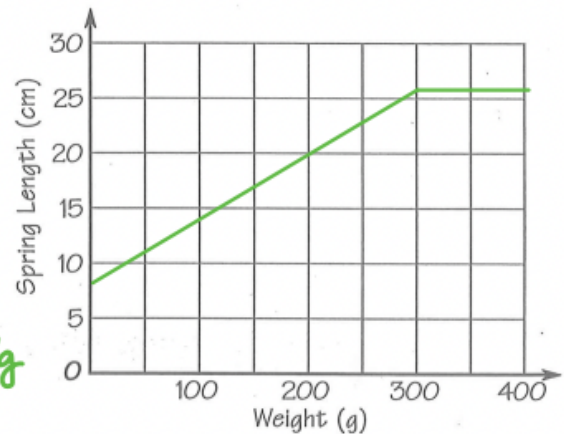
$$y = 15x + 25$$



Stretching a Spring. A spring is 8 cm long with no weight suspended from it. For each 50-gram weight, the spring stretches 3 cm until it reaches a maximum length of 26 cm. The spring remains at this length even if more weights are added.

- Complete the graph to show the relationship between spring length (y) and weight that is added (x).
- How much weight must be added for the spring to reach maximum length?
300 g
- What is the slope of the graph for spring lengths between 8 cm and 26 cm?
0.06 cm/g
- Write an equation for the part of the graph that has positive slope.

$$y = 0.06x + 8$$

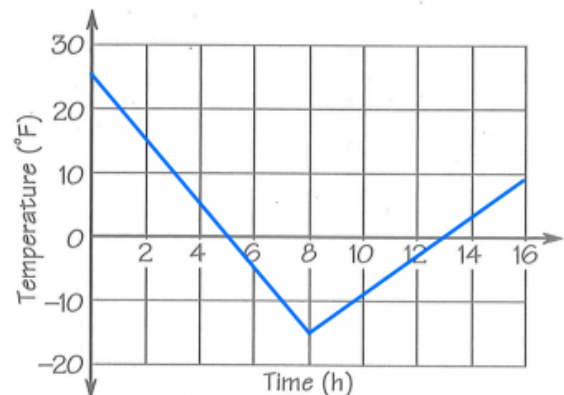


Freezing Quickly. At 10 P.M. the temperature in Quickfrozen was 25°F. The temperature dropped at a rate of 5° per hour for 8 hours. Then, for the next 8 hours, the temperature rose at a rate of 3° per hour.

- Complete the graph to show the relationship between temperature (y) and number of hours since 10 P.M. (x).
- What is the slope of the graph when the temperature is falling? When rising?
-5 *+3*
- Write an equation for the part of the graph that has negative slope.
- Give the y - and x -intercepts of the graph.

$$y = -5x + 25$$

$$(0, 25) \quad (5, 0)$$



Finish Problem 2.2 C-E

- C** The points $(4, 2)$ and $(-1, 7)$ lie on a line.
1. What is the slope of the line?
 2. Find two more points that lie on this line. Describe your method.
 3. Yvonne and Jackie observed that any two points on a line can be used to find the slope. Are they correct? Explain why or why not.
- D** Kevin said that the line with equation $y = 2x$ passes through the points $(0, 0)$ and $(1, 2)$. He also said the line with equation $y = -3x$ passes through the points $(0, 0)$ and $(1, -3)$. In general, lines with equations of the form $y = mx$ always pass through the points $(0, 0)$ and $(1, m)$. Is he correct? Explain.
- E** What is the slope of a horizontal line? Of a vertical line?

Ⓒ The points (4, 2) and (-1, 7) lie on a line.

1. What is the slope of the line?
2. Find two more points that lie on this line. Describe your method.
3. Yvonne and Jackie observed that any two points on a line can be used to find the slope. Are they correct? Explain why or why not.

Best tool for this problem is making a table!

x	y
4	2
-1	7
-6	12

Handwritten annotations: $-5 \leftarrow$ (between 4 and -1), $\rightarrow +5$ (between 2 and 7), $-5 \leftarrow$ (between -1 and -6), $\rightarrow +5$ (between 7 and 12).

x	y
4	2
-1	7
-6	12

Handwritten annotations: $\hat{-5}$ (above 4), $\hat{-5}$ (above -1), $\check{+5}$ (below 2), $\check{+5}$ (below 7).

3	3
4	2
-1	7
-6	12
-9	15

Handwritten annotations: $+1 \leftarrow$ (between 3 and 4), $\rightarrow -1$ (between 3 and 2), $-5 \leftarrow$ (between 4 and -1), $\rightarrow +5$ (between 2 and 7), $-5 \leftarrow$ (between -1 and -6), $\rightarrow +5$ (between 7 and 12), $-3 \leftarrow$ (between -6 and -9), $\rightarrow +3$ (between 12 and 15). The point (-9, 15) is circled.

$$\frac{\Delta y}{\Delta x} = \frac{5}{-5} = -\frac{1}{1}$$

$$\frac{\Delta y}{\Delta x} = \frac{3}{-3} = -\frac{1}{1}$$

Is this a point on the line?

Yes!

D Kevin said that the line with equation $y = 2x + 0$ passes through the points $(0, 0)$ and $(1, 2)$. He also said the line with equation $y = -3x + 0$ passes through the points $(0, 0)$ and $(1, -3)$. In general, lines with equations of the form $y = mx$ always pass through the points $(0, 0)$ and $(1, m)$. Is he correct? Explain.

proportional relationship

Always goes thru $(0, 0)$

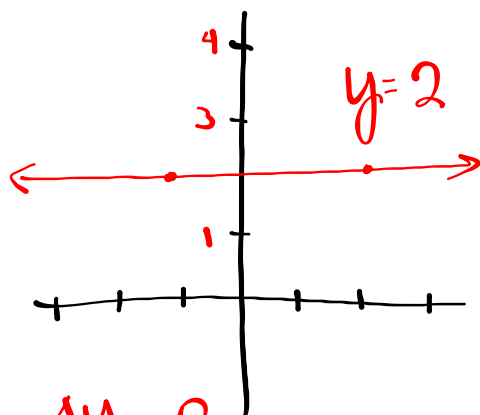
We are talking about proportional relationships here.

Linear equation that goes thru $(0, 0)$

E What is the slope of a horizontal line? Of a vertical line?

Draw them and make your calculations.

Horizontal



$$\frac{\Delta y}{\Delta x} = \frac{0}{k}$$

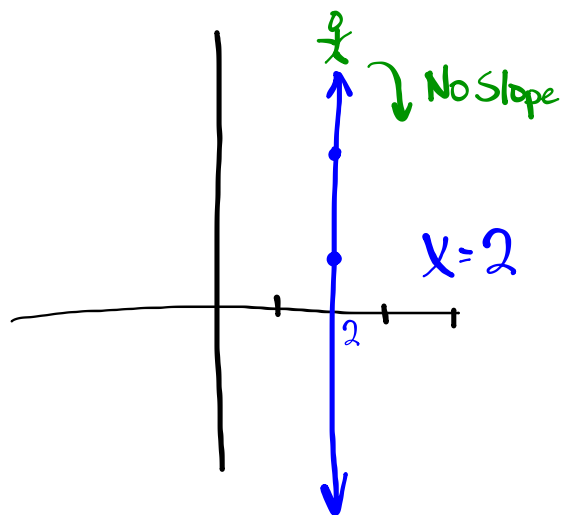
$$\frac{\Delta y}{\Delta x} = 0$$

$$y = mx + b$$

$$y = 0(x) + b$$

$$y = b$$

Vertical



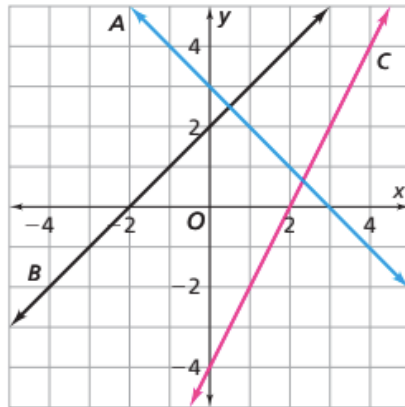
$$\frac{\Delta y}{\Delta x} = \frac{k}{0} = \text{undefined}$$

No Slope

Homework

Page 47, #'s 6 and 7

6. Here is a graph of three lines.



a. Complete the table.

Line	Constant Rate of Change	y-intercept	x-intercept
A	■	■	■
B	■	■	■
C	■	■	■

b. Here are the equations of the three lines. Match each line with its equation.

equation D: $y = 2 + x$

equation E: $y = -4 + 2x$

equation F: $y = 3 - x$

line A

line B

line C

7. Two points determine a line.

a. Which of these points are on the line that passes through $(0, 3)$ and $(2, 5)$?

$(4, 7)$

$(4, 8)$

$(4, 10)$

b. Which of these points are on the line that passes through $(-2, 10)$ and $(1, 4)$?

$(2, 0)$

$(2, 2)$

$(2, 10)$

