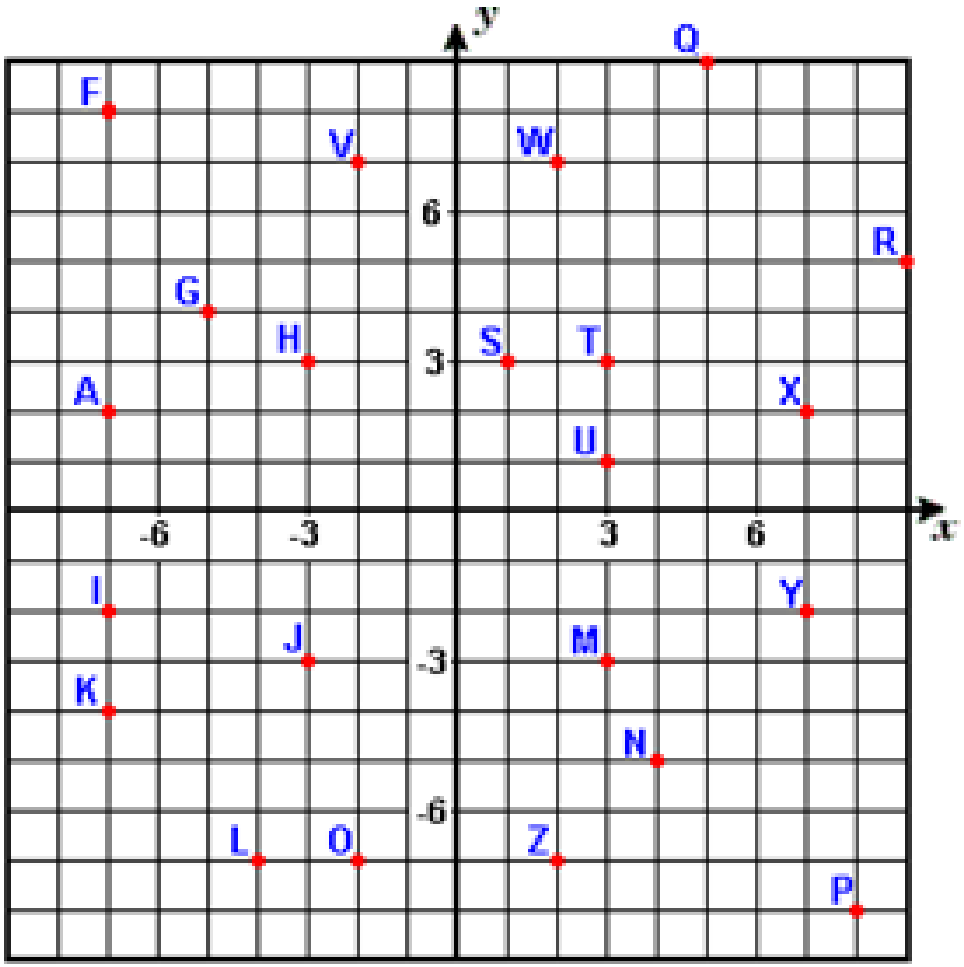
DEAR SUPER SIXTH GRADE,

Happy Tuesday! How was your long weekend?

Today is TALKING TUESDAY! In the chat box, please tell me what the coordinates (ORDERED PAIR) are for point Z?



Let's have a GREAT DAY!
Mrs. Oakes

f you
oose not to
rticipate,
rn volume
own until we
ove to next
de.

I pledge allegiance
to the flag of the
United States of
America,
and to the republic
for which it stands,
one nation under God,
indivisible, with liberty
and justice for all.

Student Expectations…

Being part of this "school" is awesome! How can YOU make this ocean even more awesome??.

=

✓I will BE HERE! **respond when my name is called, use polling tools , complete classwork, notes, and chat to participate!**

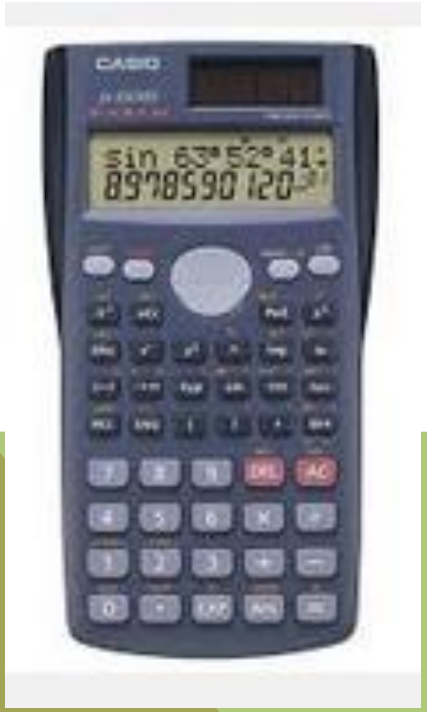
✓I will **choose my attitude!**

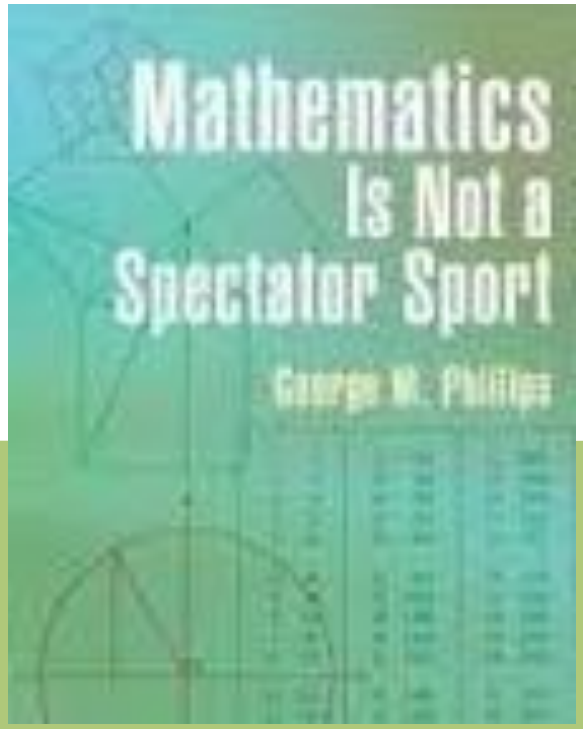
✓I will **demonstrate respect and follow directions** for my classmates and teachers to help **make their day**!

✓I will have **fun** learning!

EVERYONE needs a working mic. Call 1-866-K12-care if it's not working. Let's get it fixed!

GET A CALCULATOR AND PENCIL READY!!!!





HOMEWORK

Exit Ticket

Review OLS Lesson Unit 8 Lesson 6

UNIT 8 LESSON 6

EQUATIONS WITH TWO VARIABLES

OBJECTIVES

Students will substitute values into a linear equation with two variables to graph the linear equation.

Students will solve word problems involving graphs of points on a coordinate plan

Students will solve equations using all possible values of the variables that make the equations true

MAKE A PREDICTION:

How would you solve $x + 2y = 12$? How do you think a coordinate plane could help??

PREDICTION RULES:

1. It's okay to be wrong (it is only a prediction)
2. Think then share out your thoughts and ideas
3. Please do not type or say things like "I don't know". Make an attempt at an educated answer based on the things you already know!

LEARN: **Two-Variable Equations**

An equation is a number sentence that shows that two quantities are equal. When an equation includes a variable, the solution to the equation is the value for the variable that makes the equation a true statement.

For example, in the equation $x + 3 = 5$, x must equal 2 for the equation to be true. Therefore, 2 is the only correct solution to the equation.

Sometimes equations have two variables, such as the formula for converting temperatures from Celsius to Fahrenheit or this equation: $x + 2y = 14$.

$x = ?$

$y = ?$

To solve this equation, you must find the values of x and y that make the equation true. Since a solution is a pair of x- and y-values, each solution is an ordered pair (x, y).

Equations with two variables have many solutions.

Two-Variable Equations

Melina earns an allowance of $1 for every hour she dusts and $1 for every hour she does laundry. What are the possible amounts of time she dusted and did laundry if she worked for 10 hours?

Some everyday problems involve two unknown quantities. Therefore, the equations that you use to model the problems must involve two variables. Click the play arrow to learn more.

x = number of hours she dusts
y = number of hours she does laundry

$$x + y = 10$$

x	$+$	y	$=$	10
hours dusting		hours doing laundry		total hours

WHAT ARE SOME VALUES WE CAN USE FOR X AND Y?

$x + y = 10$

Let $x = 4$ and $y = 6$

$4 + 6 = 10$
$10 = 10$

Solution: (4, 6)

Let $x = 2$ and $y = 8$

$2 + 8 = 10$
$10 = 10$

Solution: (2, 8)

Let $x = 5$ and $y = 5$

$5 + 5 = 10$
$10 = 10$

Solution: (5, 5)

Possible Solutions:

(4, 6)
(2, 8)
(5, 5)

Show table:

$x + y = 10$	
x	y
4	6
2	8
5	5

Two-Variable Equations

Melina earns an allowance of $1 for every hour she dusts and $1 for every hour she does laundry. What are the possible amounts of time she dusted and did laundry if she worked for 10 hours?

$x + y = 10$

Possible Solutions:

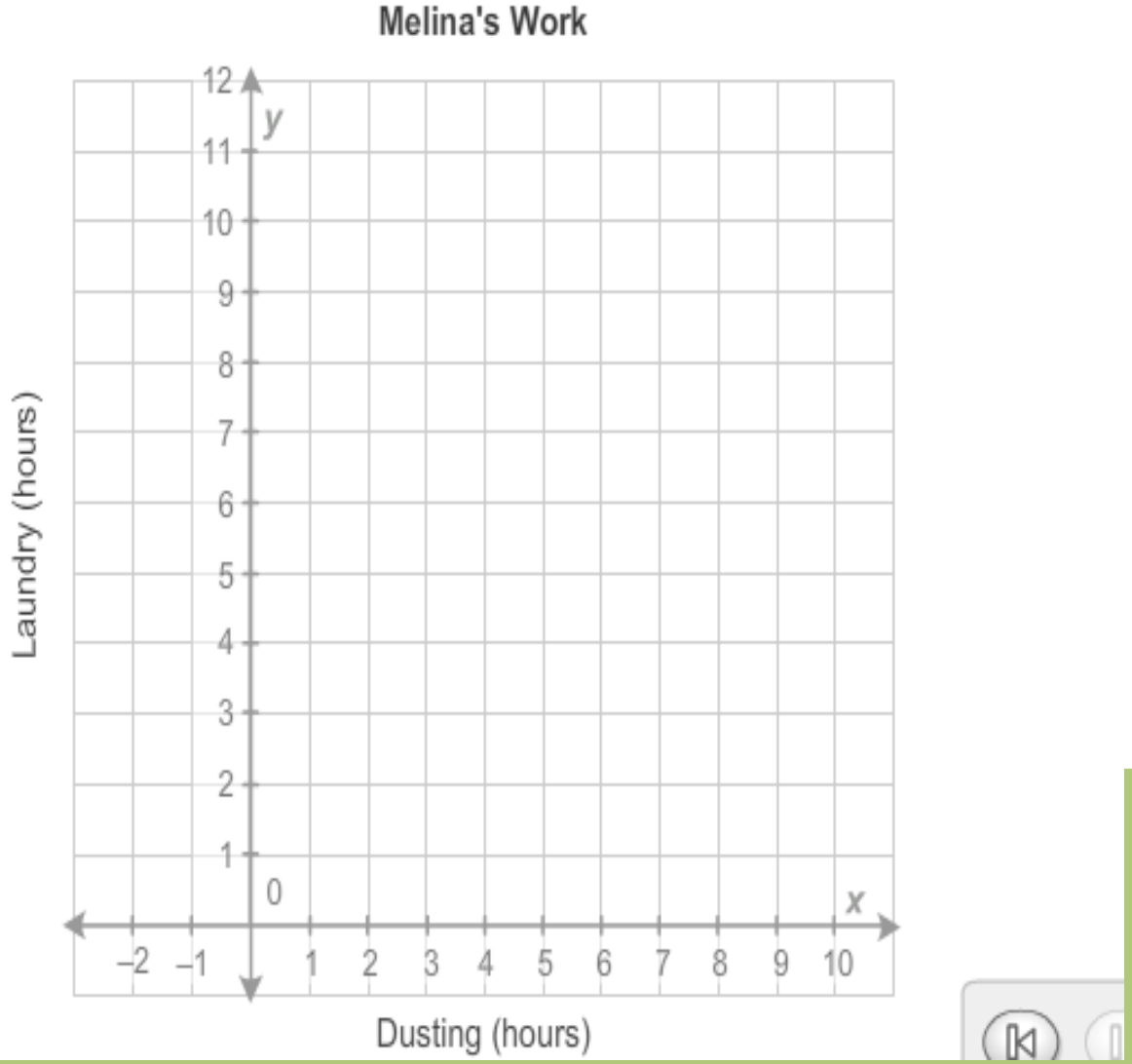
(4, 6)
(2, 8)
(5, 5)

Plot points:

?

Connect points:

?



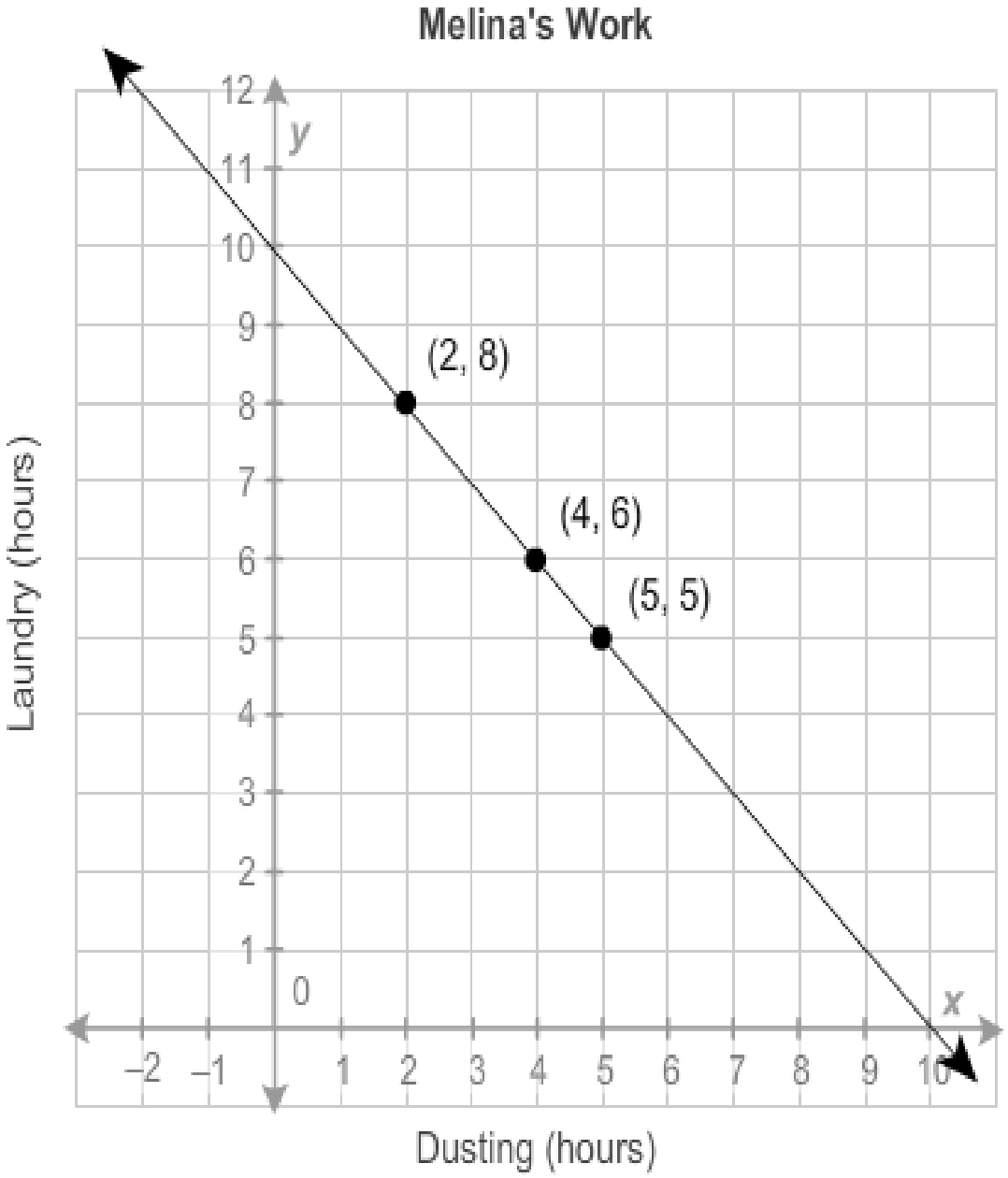
$x + y = 10$

Possible Solutions:

(4, 6)
(2, 8)
(5, 5)

Plot points:

Connect points:



DO THESE POINTS WORK?

Two-Variable Equations

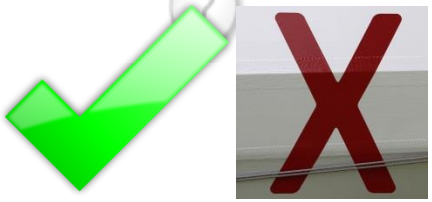
Melina earns an allowance of $1 for every hour she dusts and $1 for every hour she does laundry. What are the possible amounts of time she dusted and did laundry if she worked for 10 hours?

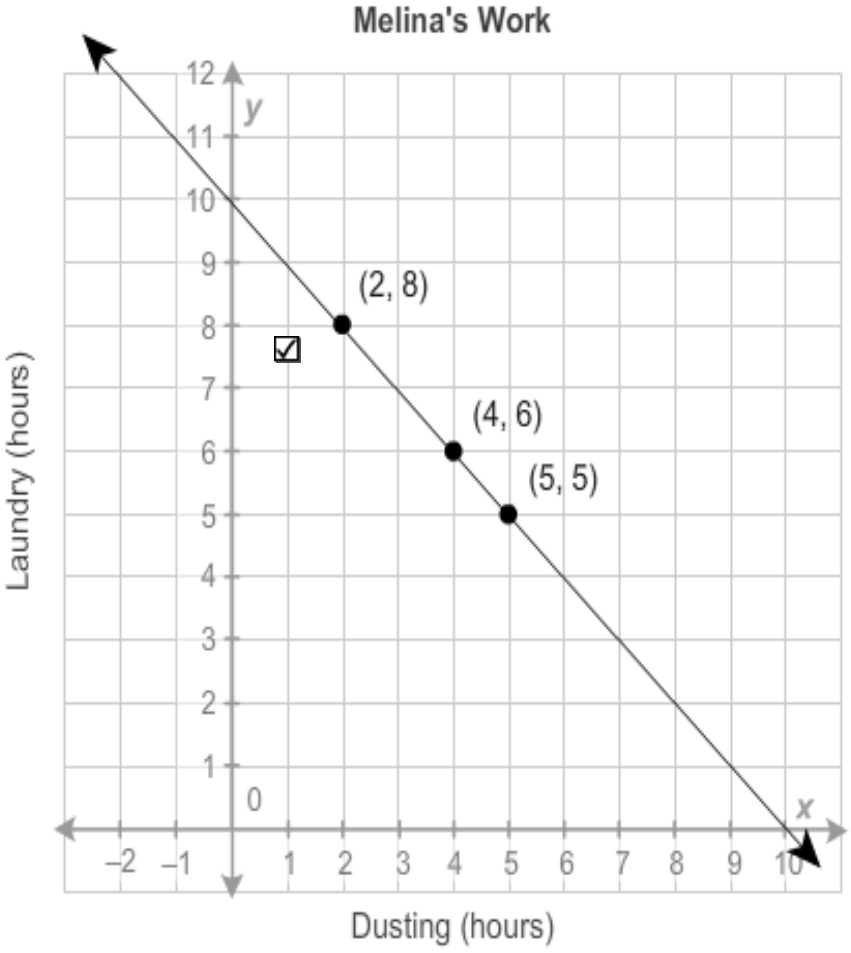
Check (7, 3):

?

Check (6, 6):

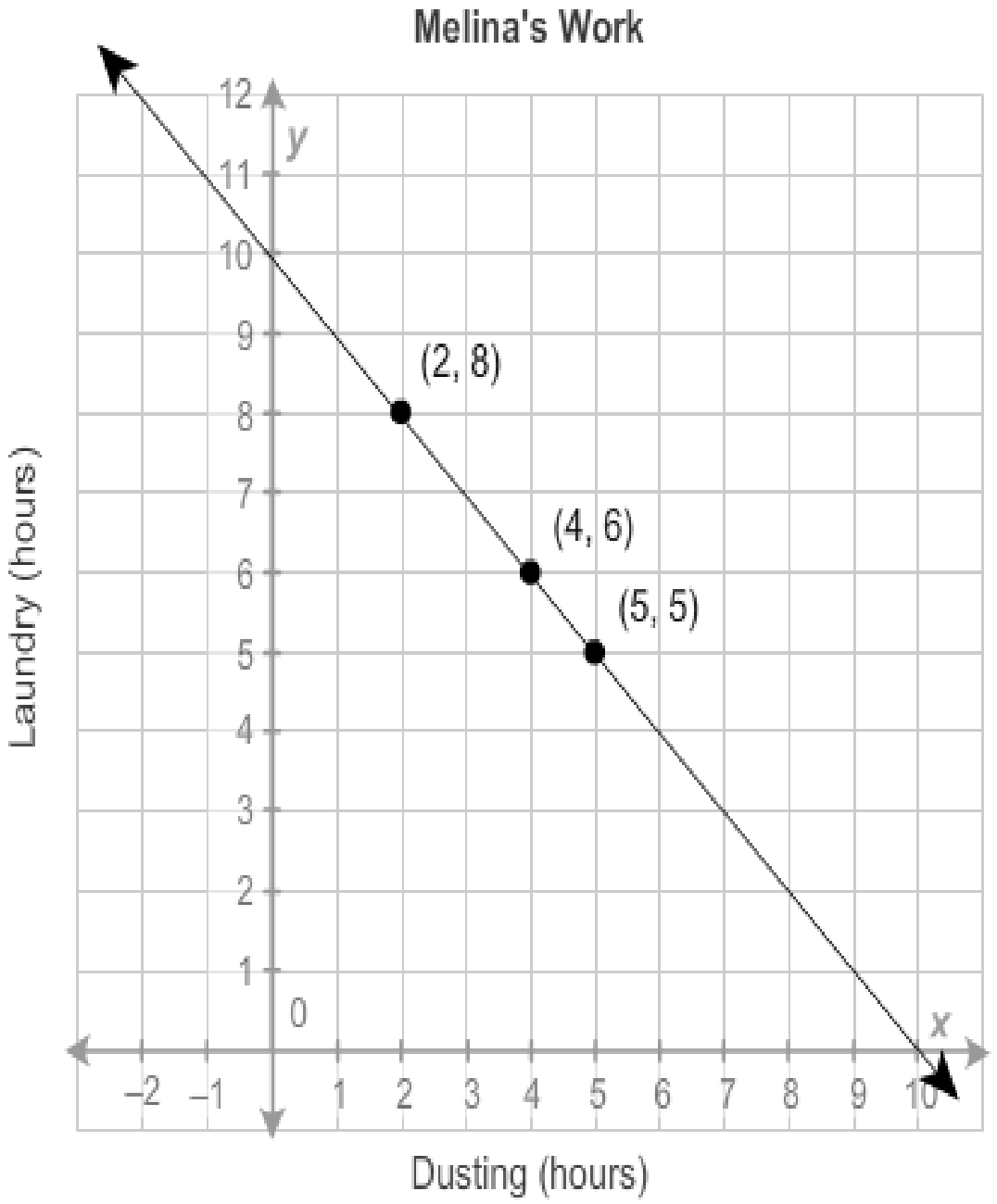
?





Check (–2, 12):

Melina cannot dust for –2 hours. Therefore, (–2, 12) can't be a solution for this problem even though it's a solution to the equation.



A PROBLEM THAT INVOLVES TWO UNKNOWNS CAN BE MODELED BY A 2 VARIABLE EQUATION, A TABLE OF ORDERED PAIRS, OR A LINEAR GRAPH

Two-Variable Equations

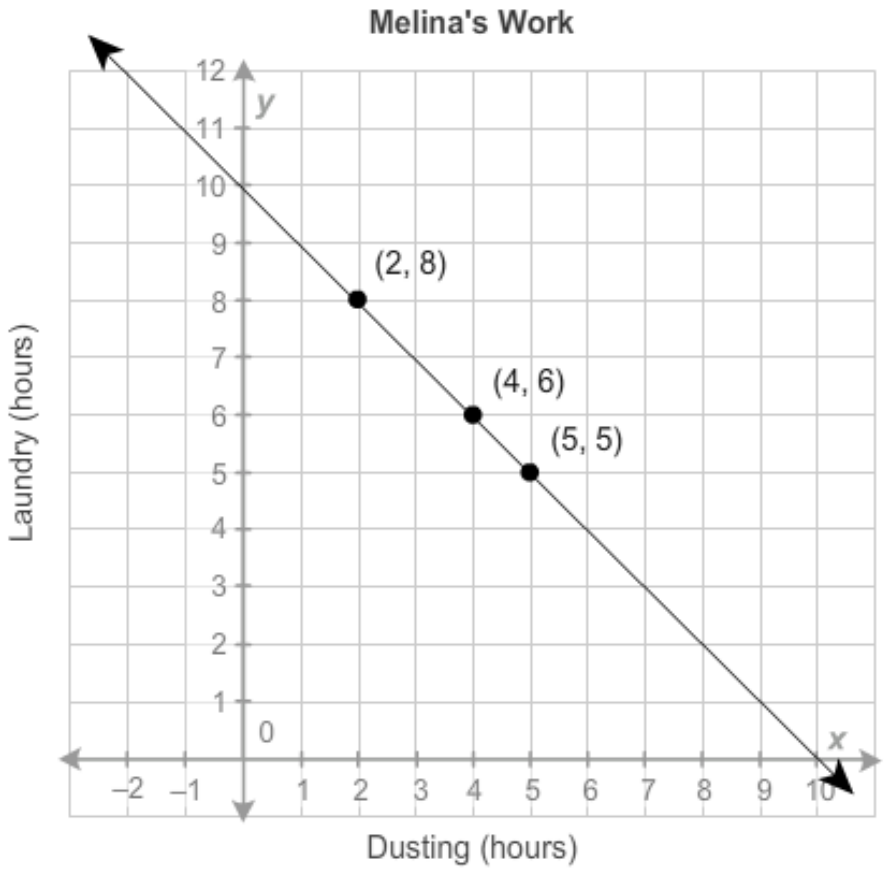
Melina earns an allowance of $1 for every hour she dusts and $1 for every hour she does laundry. What are the possible amounts of time she dusted and did laundry if she worked for 10 hours?

$x + y = 10$

Ordered Pairs:

(4, 6)
(2, 8)
(5, 5)

$x + y = 10$	
x	y
4	6
2	8
5	5



Graphing a Two-Variable Equation

Here's an equation for you to graph. In this example, the values for the *x*–coordinates have been selected for you. Substitute them into the equation to solve for the *y*–coordinates. Plot the ordered pairs and draw the line.

Marcus and Taylor are playing a game in which one person calls out any real number, and the other person has to multiply the number by –2 and increase the product by 3. If *x* is the number Marcus calls out, and *y* is the correct answer given by Taylor, the equation that represents this situation is $-2x + 3 = y$.

Graphing a Two-Variable Equation

Marcus and Taylor are playing a game in which one person calls out any real number, and the other person has to multiply the number by –2 and increase the product by 3.

Since Marcus can call out any real number, he can choose any number he wants. Marcus calls out –2, –1, 0, and 3. These numbers are listed in the column for *x*. Complete the table to find the ordered-pair solutions.

x	$-2x + 3 = y$	*y*	(*x*, *y*)
–2	$-2 \cdot (-2) + 3 = 7$	7	(–2, 7)
–1	$-2 \cdot$ ☐ $+ 3 =$ ☐	5	(–1, 5)
0	$-2 \cdot$ ☐ $+ 3 =$ ☐	☐	(0, ☐)
3	$-2 \cdot$ ☐ $+ 3 =$ ☐	☐	(☐, ☐)

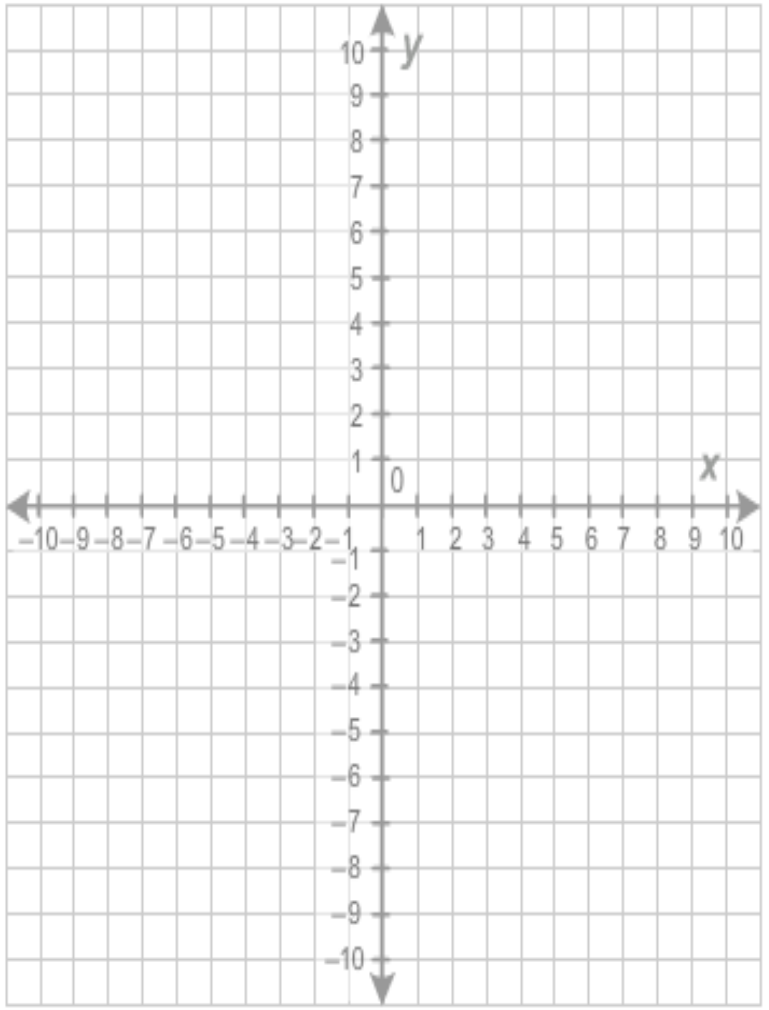
Graphing a Two-Variable Equation

Marcus and Taylor are playing a game in which one person calls out any real number, and the other person has to multiply the number by –2 and increase the product by 3.

Plot the points by dragging them to the grid.

$-2x + 3 = y$

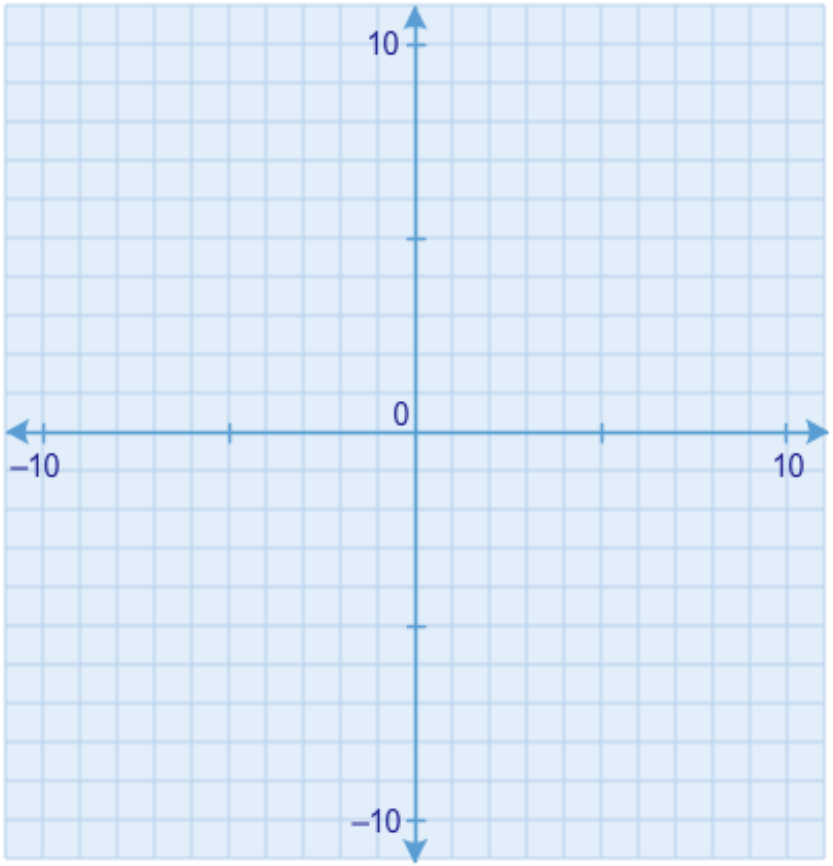
(x, y)	
(–2, 7)	●
(–1, 5)	●
(0, 3)	●
(3, –3)	●



Check

WATERFALL QUICK CHECK:

Enter each *y*-value and click Check. When you have finished, draw the graph of the equation.

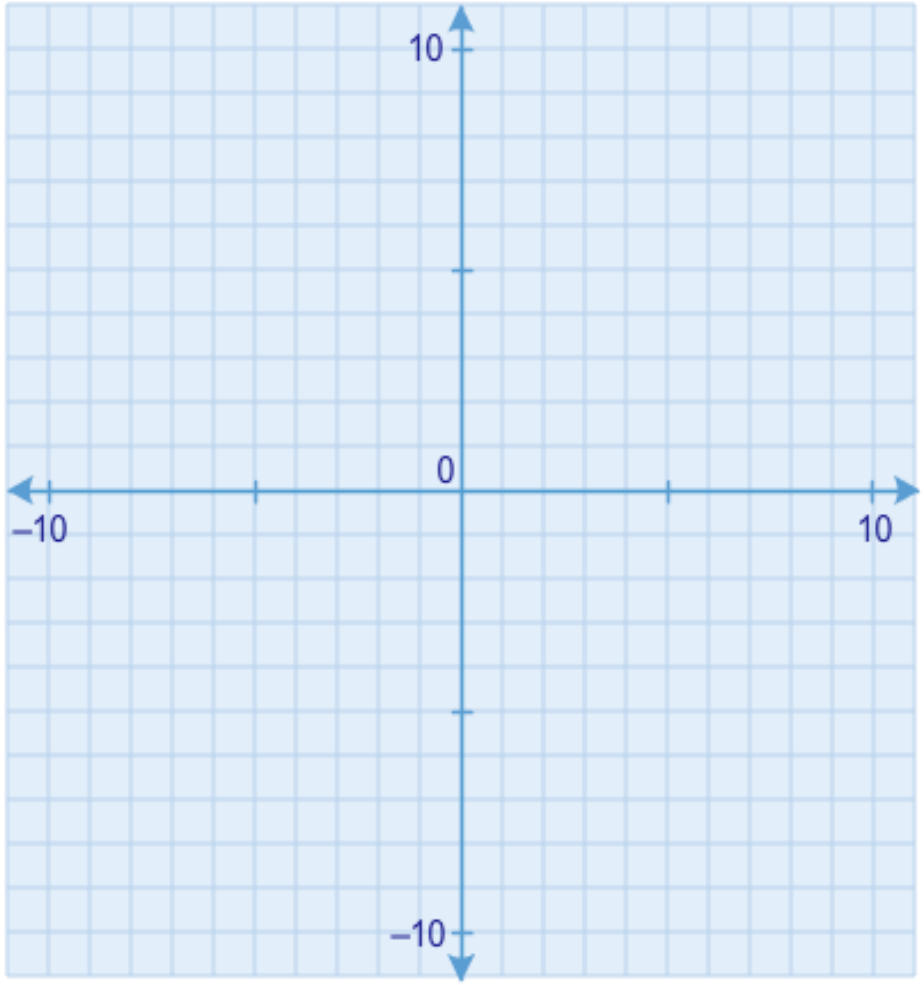


$x + y = 7$

x	y
0	
1	?
2	?
3	?
7	?

Check

WATERFALL QUICK CHECK



$y = 2x + 3$

x	y
–3	
–2	?
–1	?
0	?
1	?

WHICH VALUES FOR X AND Y MAKE THE EQUATION TRUE?

$x + 3y = 9$

$\square + 3 \cdot \square \stackrel{?}{=} 9$

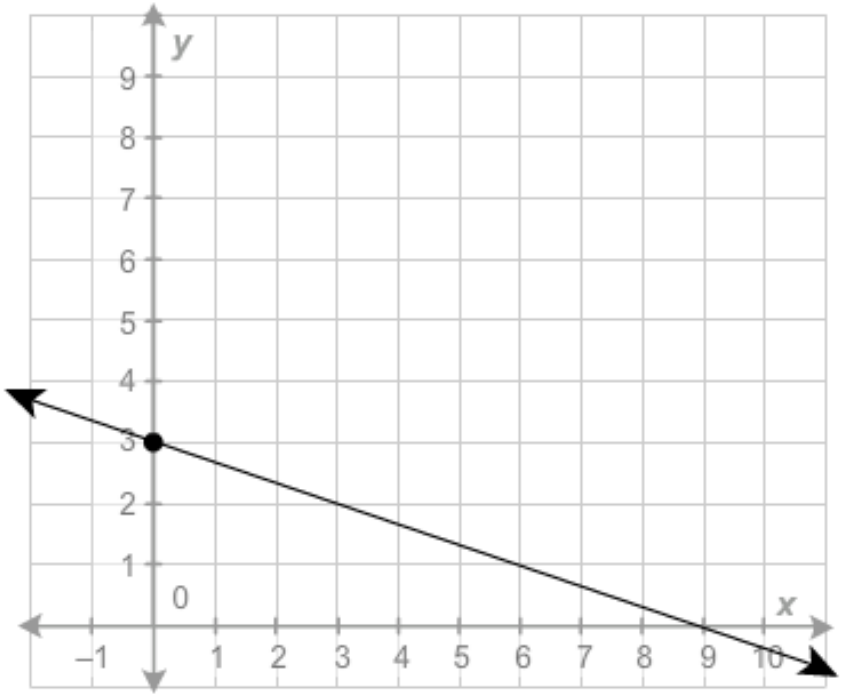
$\square + \square \stackrel{?}{=} 9$

*Look at the coordinate plan
or make yourself
an input output table.

A. (2, 3)

B. (0, 3)

C. (3, 3)



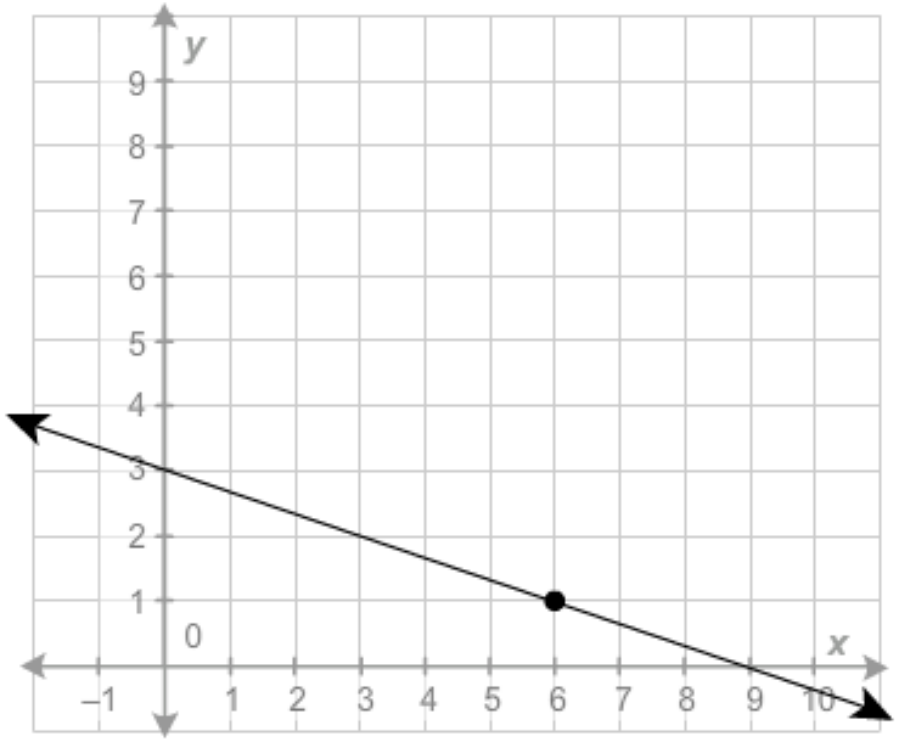
TRUE OF FALSE

Does the point on the graph (6,1) make the equation true?

$$x + 3y = 9$$

$$\square + 3 \cdot \square \stackrel{?}{=} 9$$

$$\square + \square \stackrel{?}{=} 9$$



QUESTIONS:

HOMEWORK

Exit Ticket

Review OLS Lesson Unit 8 Lesson 6