Problem of the Day: Write an equation in direct variation and solve. If y = 4.5 when x = 2.5, find y when x = 12. $k=\frac{y}{x}=\frac{4.5}{2.5}=\frac{9}{5}$ $y=\frac{9}{5}x$ $y=21.6$

y	4.5	21.6
x	2.5	12

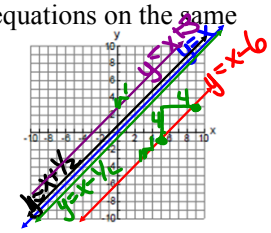
9×2.4 5×2.4

Plan for the Day:
Collect direct variation worksheet
Notes on intercepts
Homework Week 9 is due tomorrow
Objective: We will be able to find the intercepts.
Today is National Boston Cream Pie Day!!

Can more than one line have the same slope? If more than one line has the same slope, what makes the lines different?

a. Graph the following set of equations on the same graph. Label each line.

i. y = x blue
ii. y = x - 6 red
iii. y = x + 1/2 black
iv. y = x + 3 purple
v. y = x - 1/2 green



b. What observations can you make about the lines?
one direction, positive functions, parallel, Continuous, cross differently

c. What is the slope of all of the lines?
m = 1

d. How does addition or subtraction of a "b" value change the line? Changed whether it was above or below parent function

e. Complete. Lines with the same slope are ___Parallel___

http://viewpure.com/hfl0YVLS_Wo

https://www.youtube.com/watch?v=cDL3wGfCDDo

http://viewpure.com/nRLA7aNkq7M?start=0&end=0

https://www.youtube.com/watch?v=CQjw5jREd8E

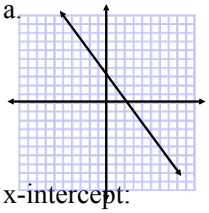
In a function, an intercept is the point at which a line crosses an axis. If it crosses the y-axis, it is called the y-intercept and the point is (0, y).

If it crosses the x-axis, it is called the x-intercept and the point is (x, 0).

The x-intercepts are also known as the zeros because the x-intercepts are where the value of the function is zero.

Study the graphs of the lines below.

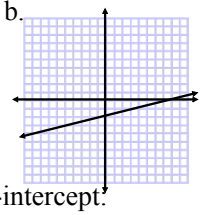
a.



x-intercept:

y-intercept:

b.



x-intercept:

y-intercept:

Finding intercepts from a table

y-intercept
(0, y)

x	y
0	y-int

x-intercept/zero
(x, 0)

x	y
x-int	0

Example:

x	y
-1	3
0	2
1	1
2	0
3	-1
4	-2
5	-3

a. Determine the slope.
b. Circle the x-intercept (zero of the function).
c. Write the coordinates of the x-intercept.
d. Circle the y-intercept.
e. Write the coordinates of the y-intercept.

Example 4:

x	y
-3	-14
-1	-10
0	-8
1	-6
3	-2
4	0
5	2

a. Determine the slope.
b. Circle the x-intercept (zero of the function).
c. Write the coordinates of the x-intercept.
d. Circle the y-intercept.
e. Write the coordinates of the y-intercept.

Finding intercepts from an equation:

to find the x-intercept, plug 0 in for y and solve for x.

to find the y-intercept, plug 0 in for x and solve for y.

Example: Find the x-and y-intercepts for the equations.

a. $y = 4x - 3$

b. $2x + 5y = 10$

c. $y = 8$

d. $x = 8$