Problem of the Day: Write and solve the direct variation equation. If y = 8 when x = 3, find y when x = 28.5.

$y = kx \quad k = \frac{y}{x} \quad k = \frac{8}{3}$

x	y
3	8
28.5	76

$y = 76$

$y = \frac{8}{3}x$

Plan for the Day: Collect the weekly homework
Finish notes from yesterday
More practice with intercepts
Objective: We will be able to find the intercepts of a line from a graph, table, and equation.
Good luck Football and Cheerleaders at Salado!!

4. $fg - hx = jk$

$-fg \quad -fg$

$\frac{-hx}{-h} = \frac{jK - fg}{-h}$

$x = \frac{jK - fg}{-h}$

or $\frac{-jK + fg}{h}$ or $\frac{fg - jk}{h}$

9. $5 + .65x = 10 + .45x$

$-.45x \quad -.45x$

$5 + 2x = 10$

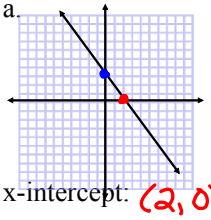
$-5 \quad -5$

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

$x = 2.5$

Study the graphs of the lines below.

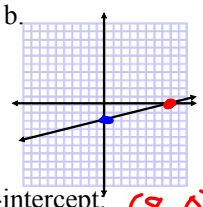
a.



x-intercept: (2, 0)

y-intercept: (0, 3)

b.



x-intercept: (8, 0)

y-intercept: (0, −2)

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

y-int

x_1, y_1

x_2, y_2

x-int

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{0-1}{2-1} = \frac{-1}{1} = -1$

a. Determine the slope.
b. Circle the x-intercept (zero of the function).
c. Write the coordinates of the x-intercept. (2, 0)
d. Circle the y-intercept.
e. Write the coordinates of the y-intercept. (0, 2)

Example 4:

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

y-int

x_1 y_1

x_2 y_2

x-int

a. Determine the slope. $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{2-0}{5-4} = \frac{2}{1} = 2$
b. Circle the x-intercept (zero of the function).
c. Write the coordinates of the x-intercept. (4, 0)
d. Circle the y-intercept.
e. Write the coordinates of the y-intercept. (0, −8)

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. $y = 4x - 3$

x-int. $0 = 4x - 3$, $+3 = 4x$, $x = \frac{3}{4}$, $(\frac{3}{4}, 0)$

y-int. $y = 4(0) - 3$, $y = 0 - 3$, $y = -3$, $(0, -3)$

b. $2x + 5y = 10$

x-int. $2x + 5(0) = 10$, $\frac{2x}{2} = \frac{10}{2}$, $x = 5$, $(5, 0)$

y-int. $2(0) + 5y = 10$, $\frac{5y}{5} = \frac{10}{5}$, $y = 2$, $(0, 2)$

c. $y = 8$

x-int. $0 = 8$ false, no x-intercept

y-int. $y = 8$, $(0, 8)$

d. $x = 8$

x-int. $x = 8$, $(8, 0)$

y-int. $0 = 8$ false, no y-intercept