Intercepts (finding, graphing and equations)

What is an x-intercept? ***A point on the x-axis which has the form (x, 0)***

What is an y-intercept? ***A point on the y-axis which has the form (0, y)***

Find the x-intercept and y-intercept of the following lines (the cover-up method)

a) 5x – 6y = 60

to find x-int y = 0 cover up -6y and now 5x = 60 so ***x- int = 12***

to find y-int x = 0 cover up 5x and now -6y = 60 so ***y- int = -10***

Write your answers as:
x-int = # or a point (x,0)

Don't write x = #
this is the equation of a vertical line
– not an intercept

b) 12x + 8y =36

to find x-int y = 0 cover up 8y and now 12x = 36 so ***x- int = 3***

to find y-int x = 0 cover up 12x and now 8y = 36 so ***y- int = 4.5***

c) x – 8y = 24

to find x-int y = 0 cover up -8y and now x = 24 so ***x- int = 24***

to find y-int x = 0 cover up x and now -8y = 24 so ***y- int = -3***

d) y = 8x – 24

to find x-int y = 0 cover up y and now 0 = 8x - 24 so solve for x ***x- int = 3***

to find y-int x = 0 cover up 8x and now y = -24 so ***y- int = -24***

e) 8x – y + 40 = 0

to find x-int y = 0 cover up -y and now 8x + 40 = 0 so solve for x ***x- int = -5***

to find y-int x = 0 cover up 8x and now -y + 40 = 0 so solve for y ***y- int = 40***

We can use intercepts to graph a line (and find slope too 😊)

a) 6x – 3y = 12

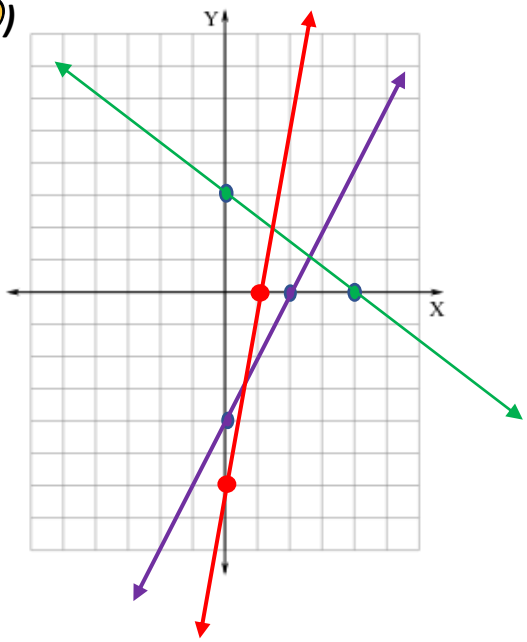
x- int = 2 ***y-int = -4*** ***slope=*** $\frac{4}{2}$

b) 15x + 20y = 60

x- int = 4 ***y-int = 3*** ***slope=*** $\frac{-3}{4}$

c) 6x – y = 6

x- int = 1 ***y-int = -6*** ***slope=*** $\frac{6}{1}$



Write the equation of a line with

a) an x-intercept of 4 and y intercept of -7 ***7x – 4y = 28***

x's 7x4 = 28 y's -4 x -7 = 28

b) an x-intercept of -22 and y intercept of 44 ***-2x + y = 44***

Assignment = worksheet

X and Y Intercepts (finding, Graphing, and equations)
Did you hear about…

A	*B*	*C*	*D*	*E*	*F*
G	*H*	*I*	*J*	*K*	*L* ?

Find the x and y intercept of the following then place the correct word in the indicated boxes

A ***3x + 2y = 6***

B ***3x – 2y = 6***

C ***-5x + 3y = 15***

D ***5x + 3y = -15***

E ***x – 2y = 4***

F ***-2x + y = -4***

G ***2x + y = 6***

H ***-3x + 2y = 9***

I ***-x – 4y = 6***

J ***4x – 3y – 12 = 0***

K ***5y = 2x - 10***

L ***x = 2y - 3***

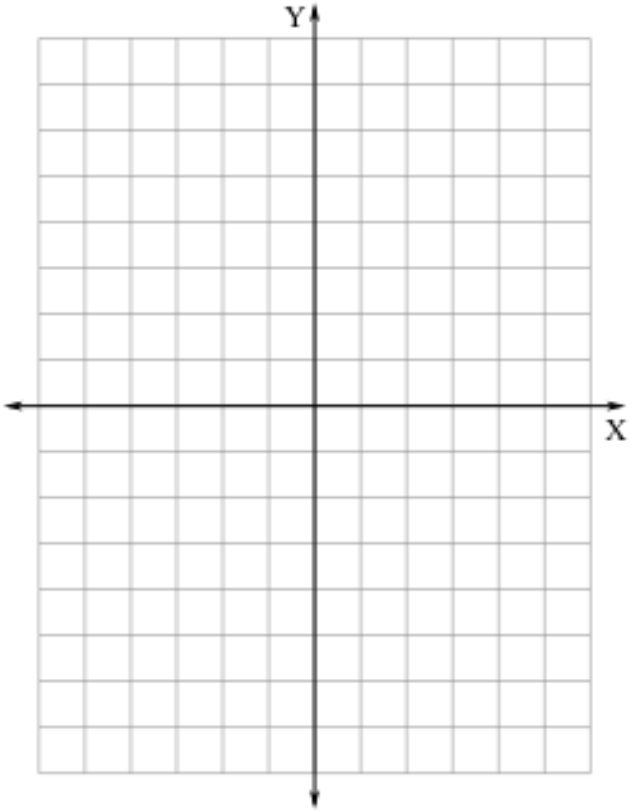
ANSWERS

$(4, 0); (0, -3)$ DECIDED	$(2, 0); (0, -6)$ COW
$(2, 0); (0, -4)$ PET	$(2, 0); (0, 3)$ THE
$(2, 0); (0, -3)$ FARMER	$(4, 0); (0, -2)$ HIS
$(-3, 0); (0, -5)$ NAMED	$(-3, 0); (0, 5)$ WHO
$(-6, 0); (0, -\frac{3}{2})$ BECAUSE	$(-3, 0); (0, \frac{9}{2})$ ROBINSON
$(-3, 0); (0, \frac{3}{2})$ SO	$(-3, 0); (0, 3)$ CRACKED
$(\frac{5}{2}, 0); (0, 5)$ ROOSTER	$(5, 0); (0, -2)$ CREW
$(3, 0); (0, -4)$ IT	$(-6, 0); (0, -2)$ UP

Intercepts and Graphing

1) State the intercepts and use them to sketch the following lines

a) 6x + 2y = 12



x-int = ____ y-int = ____

b) 4x + y = 4

x-int = ____ y-int = ____

c) 12x – 3y = -12

x-int = ____ y-int = ____

d) 54x – 9y = 54

x-int = ____ y-int = ____

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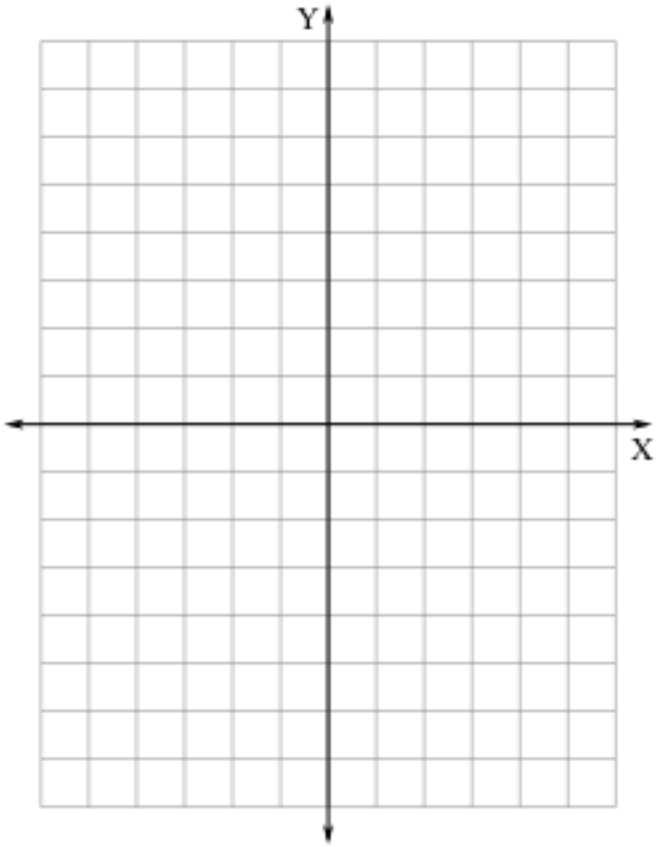
e) 6x – 2y = -12



x-int = ____ y-int = ____

f) y = 2x – 8

x-int = ____ y-int = ____

g) 7y – 2x = 14

x-int = ____ y-int = ____

h) 3y – x = 6

x-int = ____ y-int = ____

i) x – y – 5 = 0

x-int = ____ y-int = ____

j) ***7y – x + 7 = 0***

x-int = ____ y-int = ____

k) ***y = 6x – 6***

x-int = ____ y-int = ____

l) ***y = 5***

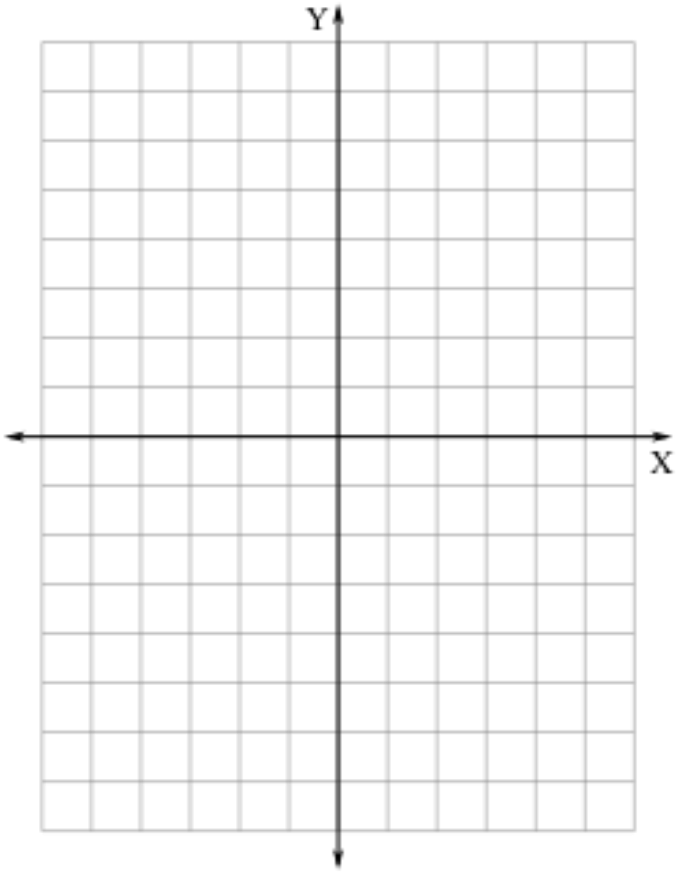
x-int = ____ y-int = ____

m) ***x = -2***

x-int = ____ y-int = ____

n) ***18x – 9y – 18 = 0***

x-int = ____ y-int = ____



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3) ***Can the x-intercept and a y-intercept of a line be at the same point _____***

4) ***Create an equation of a line with the following intercepts***

a) ***x-int = 4 y-int = 6*** *b)* ***x-int = 7 y-int = 3*** *c)* ***x-int = 9 y-int = -4***

d) ***x-int = -6 y-int = 1*** *e)* ***x-int = 4 y-int = -3*** *f)* ***x-int = 15 y-int = -2***

5) ***Why does the line y = 7 have only 1 intercept? _____***

6) ***Why does the line x = 4 have only 1 intercept? _____***

7) ***Write the equation of a line that only has a y-intercept _____***