

Using Different Forms of Linear Relations

Learning Goal:

By the end of today, I will be able to rearrange a linear equation to a form that best serves the problem at hand (y=mx+b, intercept form, standard form)

$$y = mx + b \quad y = 3x + 5$$

$$\text{Intercept form} \quad 8x - 4y = 32$$

$$\text{Standard form} \quad 9x - 5y + 45 = 0$$

The Equation of a Line is given by the following:

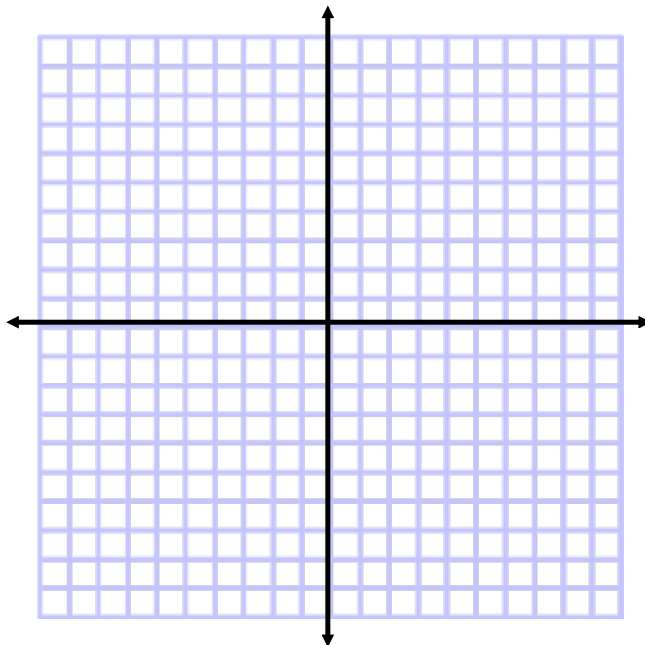
$$y = mx + b$$

where "m" is the slope of the line and "b" is the y intercept (0,b).

State the slope and y intercept for the following and use that information to graph the line.

$$y = \frac{3}{4}x + 5$$

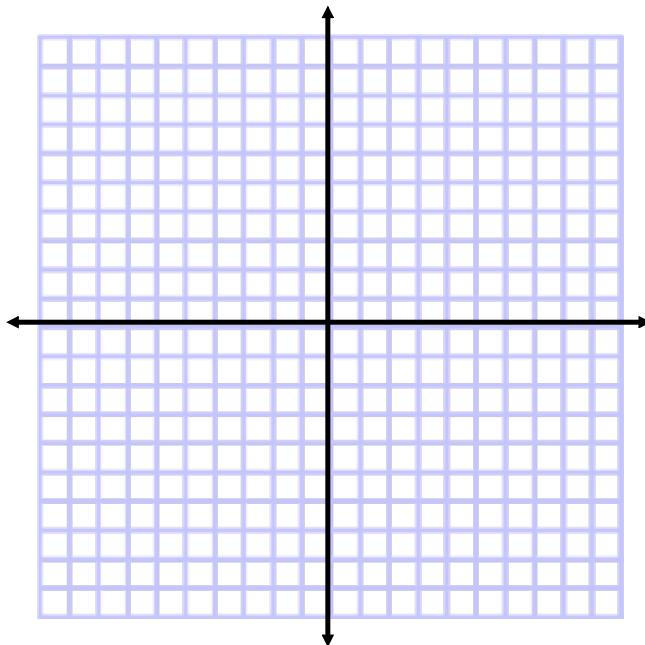
$$y = -\frac{5}{2}x - 3$$



State the slope and y intercept for the following and use that information to graph the line.

$$-5x + 4y - 12 = 0$$

$$16 + 4y - 7x = 0$$

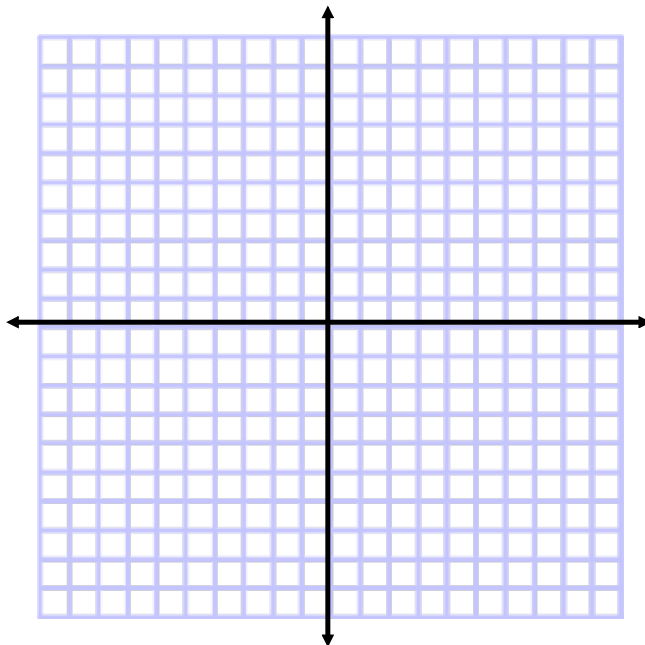


Find the x and y intercepts for the following and use that information to graph the line.

$$-6x + 4y - 12 = 0$$

x intercepts (y=0)

y intercepts (x=0)

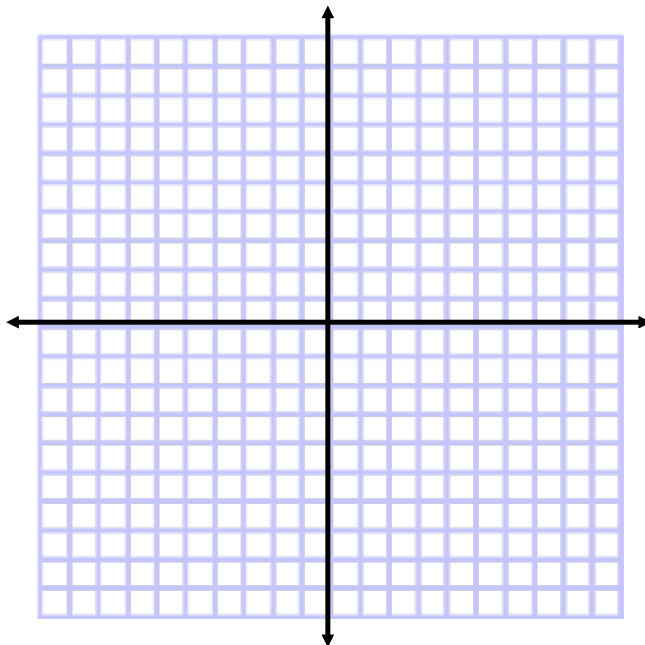


Find the x and y intercepts for the following and use that information to graph the line.

$$-5y - 30 = 10x$$

x intercepts (y=0)

y intercepts (x=0)



Word Problem Strategies

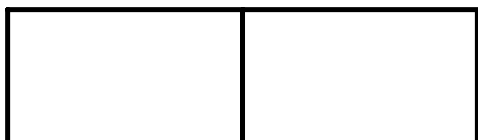
What am I being asked? (main idea)

What do I know?

What do I need to know/do to find the answer?

What does the answer mean?

A farmer wants to build two pens for his animals; one for horses and one for his cows. He has 240m of fencing to work with and he wants the pens to be exactly the same shape and size so the horses and cows don't argue about who is more important.



What am I being asked? (main idea)

What do I know?

What do I need to know/do to find the answer?

What does the answer mean?

Write an equation to represent the amount of fencing required. (hint, think perimeter)

Rearrange your equation to isolate one of the unknowns.

Create a table of values with at least 6 pairs of dimensions for this relationship.

What is width of the pen if the length is 20m?

Chocolate covered Almonds are \$4.50/kg and chocolate covered raisins are \$1.50/kg.

I have \$30.00 to spend on chocolate for our math party.

Give four combinations of almonds and raisins that would fulfill my budget.

What would the equation for this scenario look like?

What am I being asked? (main idea)

What do I know?

What do I need to know/do to find the answer?

What does the answer mean?

Consolidation Questions:

Grade 9 Academic - page 269-270 # 3&4(a,c,e), 5(i, ii), 6(a,b), 7,8,9