

Bell Ringer - Write an equation in slope-intercept form of the line that passes through $(3, -2)$ and has a slope of $-\frac{5}{7}$.

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$$y = -\frac{5}{7}x + b$$

$$-2 = -\frac{5}{7}\left(\frac{3}{1}\right) + b$$

$$-2 = -\frac{15}{7} + b$$

$$\frac{15}{7} + -2 = b$$

$$\frac{15}{7} + \frac{-14}{7} = b$$

$$\frac{1}{7} = b$$

Answer

$$y = -\frac{5}{7}x + \frac{1}{7}$$

Writing Linear Equations in Standard Form

Standard Form: $Ax + By = C$

- * A , B , and C are integer coefficients; A must be **positive**.
- * x and y represent an ordered pair.
- * C term is called a constant; doesn't have a variable.
- * most common form used in story problems.
- * to graph, find the intercepts $(x, 0)$ and $(0, y)$ and plot these points on the graph, then connect with a line.

Write the equation in standard form with integer coefficients.

$$1. y = -\frac{3}{4}x + 5$$

$$Ax + By = C$$

$$+\frac{3}{4}x$$

$$\left(\frac{3}{4}x + y = 5\right) \cdot 4$$

$$3x + 4y = 20$$

2. Write the standard form of the equation passing through (3 , 7) with a slope of 2.

$$y - 7 = 2(x - 3) \quad \text{point-slope form}$$

$$y - 7 = 2x - 6$$

+7 +7

$$y = 2x + 1$$

-2x -2x

$$(-2x + y = 1) \cdot -1$$

$$2x - y = -1$$

$$y - 7 = 2x - 6$$

+6 +6

$$y - 1 = 2x$$

-y -y

$$-1 = 2x - y$$

3. You have \$12 to buy peaches and blueberries for a fruit salad. Peaches cost \$1.50 per pound and blueberries cost \$4 per pound. Write a linear equation in standard form that models the amounts of peaches and blueberries that you can buy.

Define the variables

x = pounds of peaches

y = pounds of blueberries

$$1.5x + 4y = 12$$

$$3x + 8y = 24 \quad \text{another version}$$

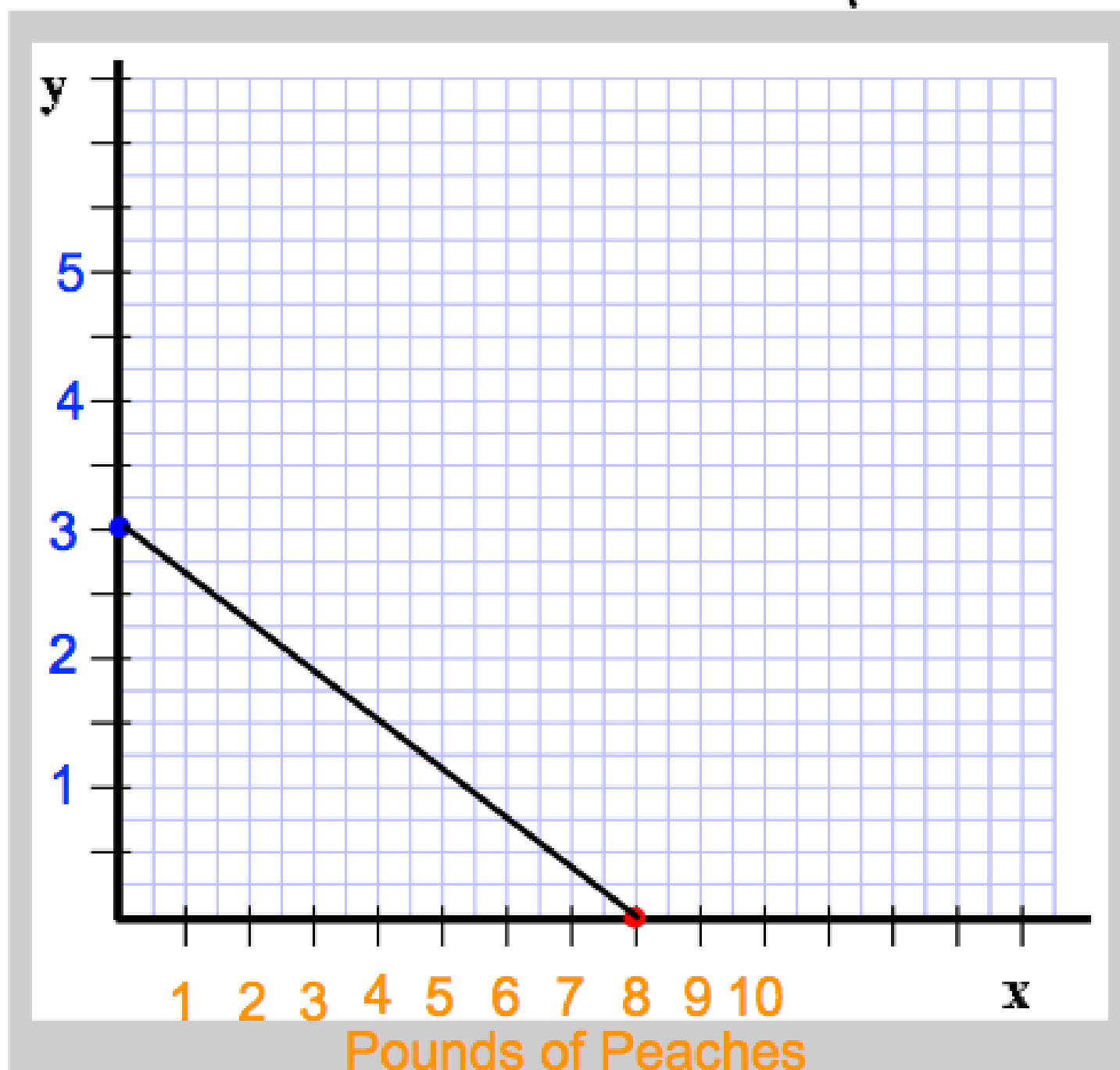
$$15x + 40y = 120 \quad \text{another version}$$

4. Sketch a graph of #3 using intercepts. $1.5x + 4y = 12$

$(8, 0)$

$(0, 3)$

Pounds of
Blueberries



5. What does the x-intercept represent?

If you buy 8 pounds of peaches, you can not buy any pounds of blueberries.

6. What does the y-intercept represent?

If you buy 3 pounds of blueberries, you can not buy any pounds of peaches.