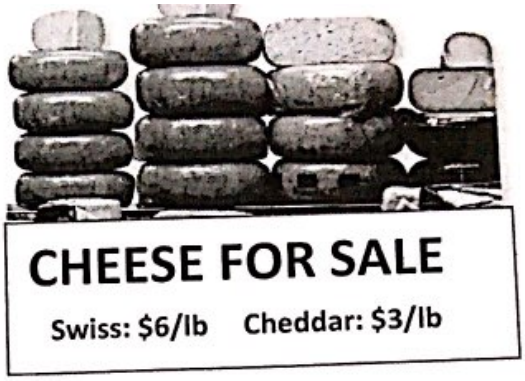
Explore:
You sold a total of $24 worth of cheese. You forgot how many pounds of each type of cheese you sold.

$\frac{6}{\text{lb}} \cdot \underbrace{\text{Pounds of swiss}}_{x} + \frac{3}{\text{lb}} \cdot \underbrace{\text{Pounds of cheddar}}_{y} = 24$



1. Let x represent the number of pounds of Swiss cheese. Let y represent the number of pounds of cheddar cheese. Write an equation that relates x and y.

$6x + 3y = 24$

2. You sold 2 pounds of cheddar cheese. How many pounds of Swiss cheese did you sell? Explain.

y-values, so $y = 2$

$6x + 3(2) = 24$

$6x + 6 = 24$

$-6 \quad -6$

$\frac{6x}{6} = \frac{18}{6}$

$x = 3$

3 pounds of Swiss

3. Does the value $x = 2.5$ make sense in the context of the problem? Explain.

Yes, it is possible to have part of a pound of cheese

4. If you sold 0 pounds of Swiss cheese, how many pounds of cheddar cheese did you sell? Explain.

x-value, so $x = 0$

$6(0) + 3y = 24$

$\frac{3y}{3} = \frac{24}{3}$

$y = 8$

8 pounds of cheddar

5. If you sold 0 pounds of cheddar cheese, how many pounds of Swiss cheese did you sell? Explain.

y-value, so $y = 0$

$6x + 3(0) = 24$

$\frac{6x}{6} = \frac{24}{6}$

$x = 4$

4 pounds of cheddar

6. What point will be on the y-axis of your graph? (This point is the y-intercept.) What does this point mean in context of this problem? where $x = 0$

See #4 $x = 0$ & $y = 8$

So $(0, 8)$ is y-intercept

7. What point will be on the x-axis of your graph? (This point is the x-intercept.) What does this point mean in context of this problem? when $y = 0$

See #5 $y = 0$ & $x = 4$

So $(4, 0)$ is x-intercept

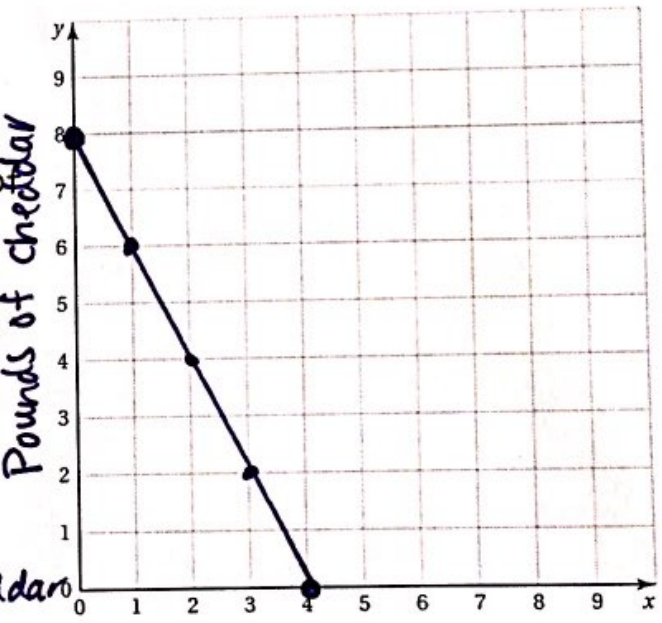
8. Plot the y-intercept and the x-intercept. Use a straight-edge to connect the two points.

9. Find another point on the line you drew. What does this point mean in the context of this problem?

$(1, 6)$ - means 1 Pound of Swiss & 6 Pounds of Cheddar

$(2, 4)$ - 2 lbs. Swiss & 4 Cheddar

$(3, 2)$ - 3 lbs. Swiss & 2 lbs. Cheddar



10. Rewrite the equation in $y = mx + b$ form.

$6x + 3y = 24$

$-6x \qquad -6x$

$\frac{3y}{3} = \frac{24 - 6x}{3}$ $\quad \frac{24}{3} - \frac{6x}{3}$

$y = 8 - 2x$