

1. Find the **slope** given the two points.

A. $(5, 3)$ and $(10, 8)$

$$\frac{8-3}{10-5} = \frac{5}{5} = 1 = m$$

B. $(-3, -10)$ and $(-1, -1)$

$$\frac{-1 - (-10)}{-1 - (-3)} = \frac{9}{2} = m$$

C. $(-3, 5)$ and $(7, 5)$

$$\frac{5-5}{7-(-3)} = \frac{0}{10} = 0 = m$$

D. $(11, -4)$ and $(11, 8)$

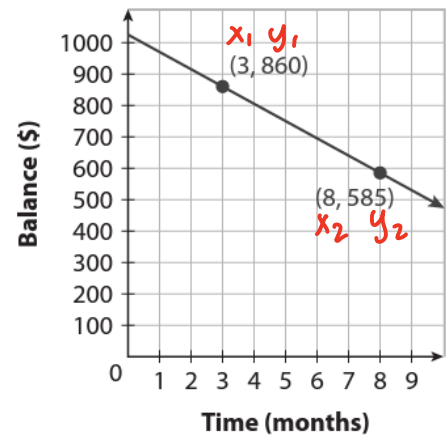
$$\frac{8 - (-4)}{11 - 11} = \frac{12}{0} = \text{undef.}$$

2. Find the **slope** and explain its meaning.

$$\frac{585 - 860}{8 - 3} = \frac{-275}{5} = -55$$

Slope: _____

Meaning: For every month they are losing \$55.



3. Find the **x- and y-intercepts**.

A. $4x - 6y = 24$

$$\frac{4x}{4} = \frac{24}{4}$$

$$x = 6$$

$$(6, 0)$$

$$\frac{-6y}{-6} = \frac{24}{-6}$$

$$y = -4$$

$$(0, -4)$$

B. $-3x + 9y = 18$

$$\frac{-3x}{-3} = \frac{18}{-3}$$

$$x = -6$$

$$(-6, 0)$$

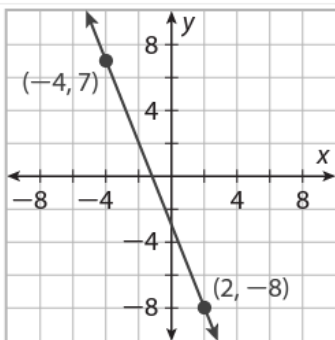
$$\frac{9y}{9} = \frac{18}{9}$$

$$y = 2$$

$$(0, 2)$$

4. Find the **slope** of each line.

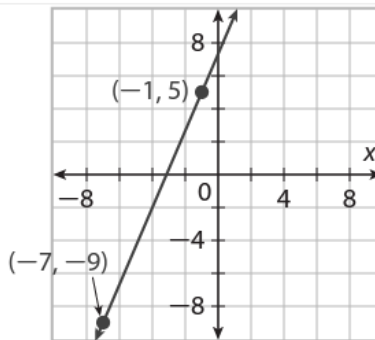
A.



$$\frac{-8 - 7}{2 - (-4)} = \frac{-15}{6} \div 3$$

$$m = \frac{-5}{2}$$

B.



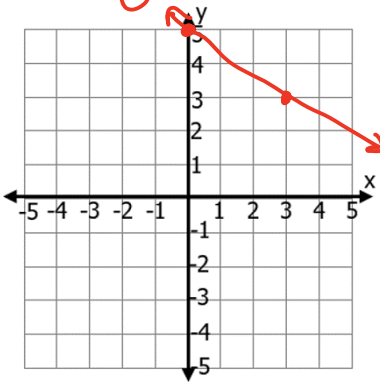
$$\frac{5 - (-9)}{-1 - (-7)} = \frac{14}{6} \div 2$$

$$m = \frac{7}{3}$$

5. Identify the **slope** and **y-intercept**. Then, use the slope and y-intercept to **graph** the line.

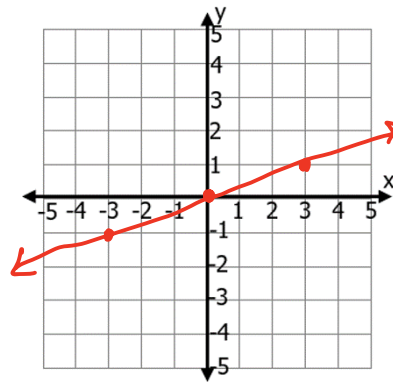
A. $y = -\frac{2}{3}x + 5$

Slope: $-\frac{2}{3}$ Y-Int: 5



B. $y = \frac{1}{3}x$

Slope: $\frac{1}{3}$ Y-Int: 0



Write the equation of the line in slope-intercept form. $y = mx + b$

6. Slope: $-\frac{2}{5}$ Y-int: (0, 11)^b

$$y = -\frac{2}{5}x + 11$$

7. Slope: -3 Point: (-1, 4)

$$4 = -3(-1) + b$$

$$4 = 3 + b$$

$$-3 \quad -3$$

$$1 = b$$

$$y = -3x + 1$$

8. Points: $(-5, 3)$ and $(-2, -6)$

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{-6 - 3}{-2 - (-5)} = \frac{-9}{3} = -3$$

$$3 = -3(-5) + b$$

$$3 = 15 + b$$

$$-15 \quad -15$$

$$-12 = b$$

$$y = -3x - 12$$

Write the equation of the line in point-slope form. $y - y_1 = m(x - x_1)$

9. Slope: -7 Point: (-3, 5)

$$y - 5 = -7(x + 3)$$

10. Points: (2, 2) and (0, -3)

$$\frac{-3 - 2}{0 - 2} = \frac{-5}{-2} = \frac{5}{2}$$

$$y - 2 = \frac{5}{2}(x - 2)$$

Write the equation of the line in standard form. $Ax + By = C$

11. Slope: 2 Point: (-3, 5)

$$y - 5 = 2(x + 3)$$

$$y - 5 = 2x + 6$$

$$\begin{array}{r} y - 5 \\ + 5 \end{array} = \begin{array}{r} 2x + 6 \\ + 5 \end{array}$$

$$y = 2x + 11$$

$$\begin{array}{r} y \\ - 2x \end{array} = \begin{array}{r} 2x + 11 \\ - 2x \end{array}$$

$$\rightarrow -2x + y = 11$$

12. Points: (-6, -1) and (-2, 15)

$$\frac{15 - (-1)}{-2 - (-6)} = \frac{16}{4} = 4$$

$$-4x + y = 23$$

$$y + 1 = 4(x + 6)$$

$$y + 1 = 4x + 24$$

$$\begin{array}{r} y + 1 \\ - 1 \end{array} = \begin{array}{r} 4x + 24 \\ - 1 \end{array}$$

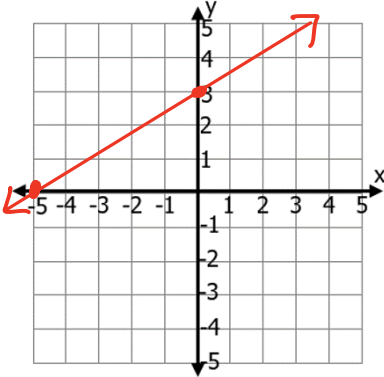
$$y = 4x + 23$$

Graph the equations in standard form by finding the x- and y-intercepts.

13. $-3x + 5y = 15$

X-int: $\frac{-3x=15}{-3} \quad x=-5$

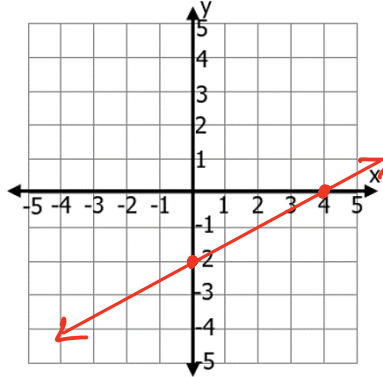
Y-int: $\frac{5y=15}{5} \quad y=3$



14. $2x - 4y = 8$

X-int: $\frac{2x=8}{2} \quad x=4$

Y-int: $\frac{-4y=8}{-4} \quad y=-2$



Tell which form each equation is in.

15. $y - 5 = -3(x + 2)$

point-slope

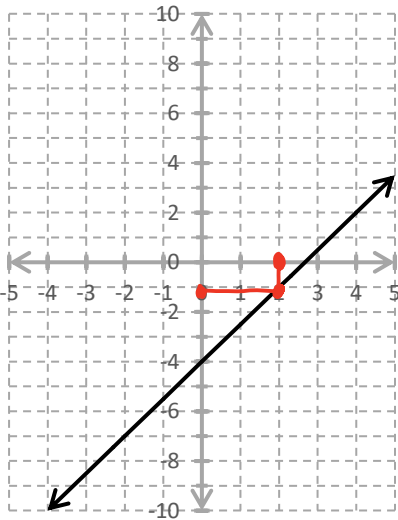
16. $y = -\frac{6}{5}x + 7$

slope-intercept

17. $-8x + 7y = 56$

Standard Form

18. Find the value of $f(x) = \frac{3}{2}x - 4$ when $x = 2$ using the given graph.



$y = -1$

19. Jill earns \$8 per hour babysitting for the Reynolds family. She makes \$7 an hour plus \$5 for travel from the Jones family. Write an equation to find the number of hours when Jill will earn the same amount for both families.

Reynolds: $8h$

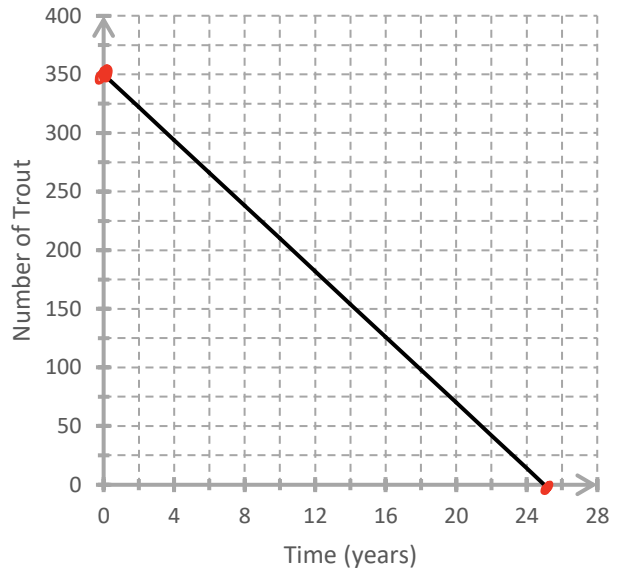
Jones: $7h + 5$

$8h = 7h + 5$

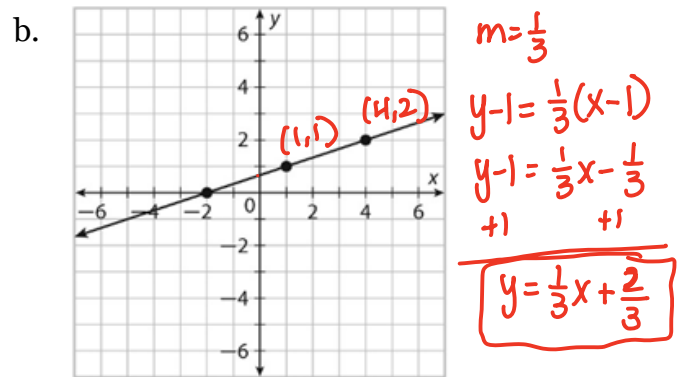
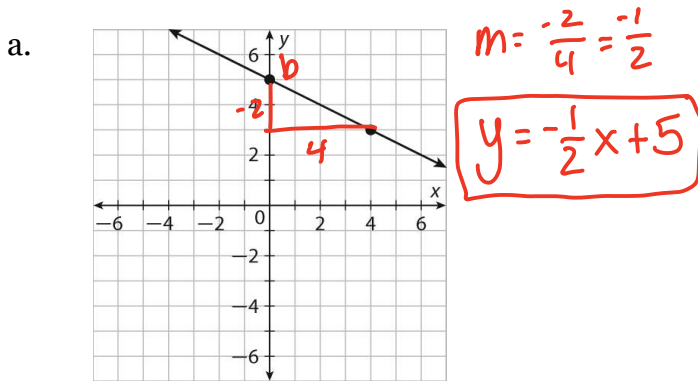
20. A lake was stocked with 350 trout. Each year, the population decreases by 14. The population of trout in the lake after x years is represented by the function $f(x) = 350 - 14x$. What does each intercept represent?

X-int: 25 years there will be 0 trout

Y-Int: 350 trout started with



21. Write the equation of the line in **slope-intercept** form.



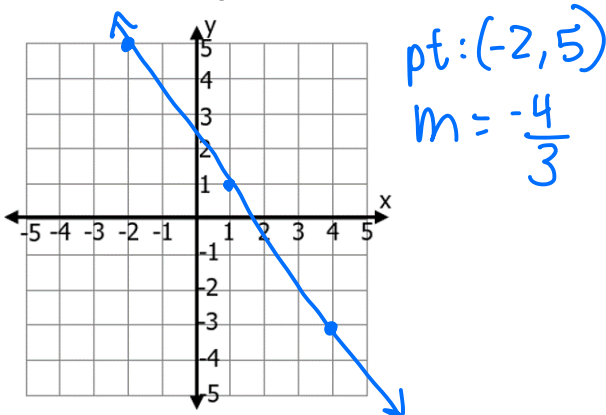
22. The cost of producing x chairs is $p = 46x + 100$. The chairs cost \$50 a piece, which can be represented by $c = 50x$. For how many chairs does the cost of production equal the sales?

$$\begin{array}{r} 46x + 100 = 50x \\ -46x \quad -46x \\ \hline 100 = 4x \\ x = 25 \end{array}$$

25 chairs.

23. Graph the **point-slope** equations below:

a. $y - 5 = -\frac{4}{3}(x + 2)$



b. $y + 1 = 2(x - 4)$

