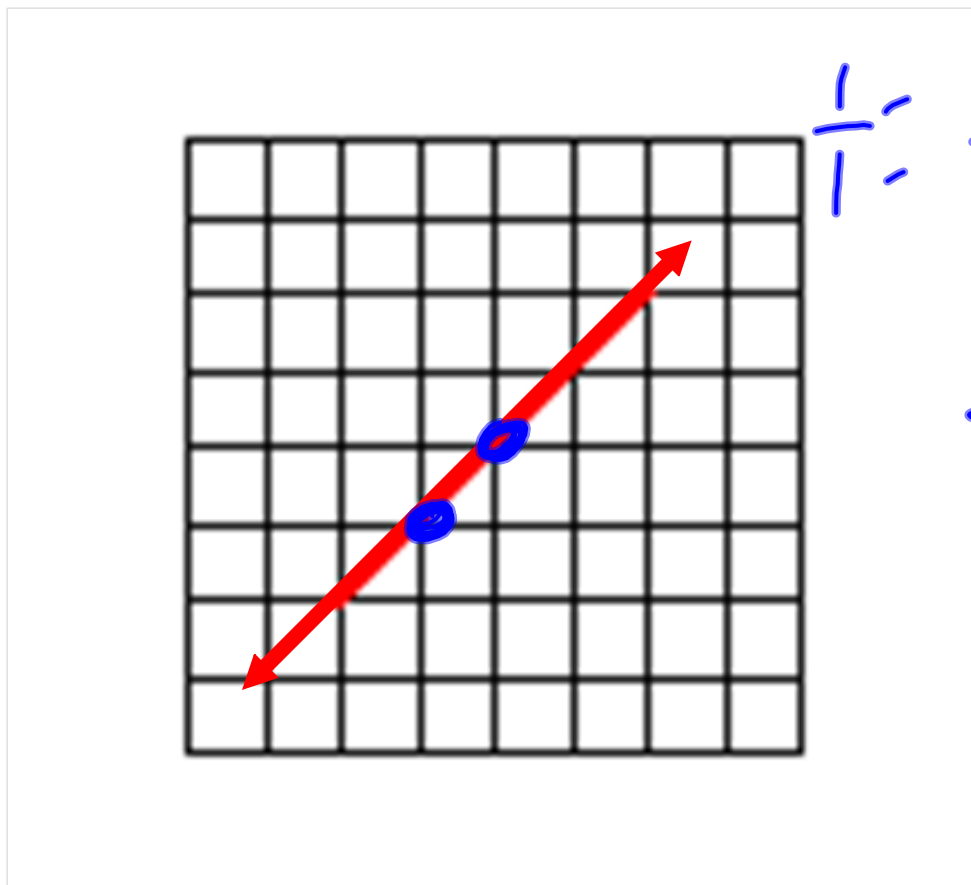


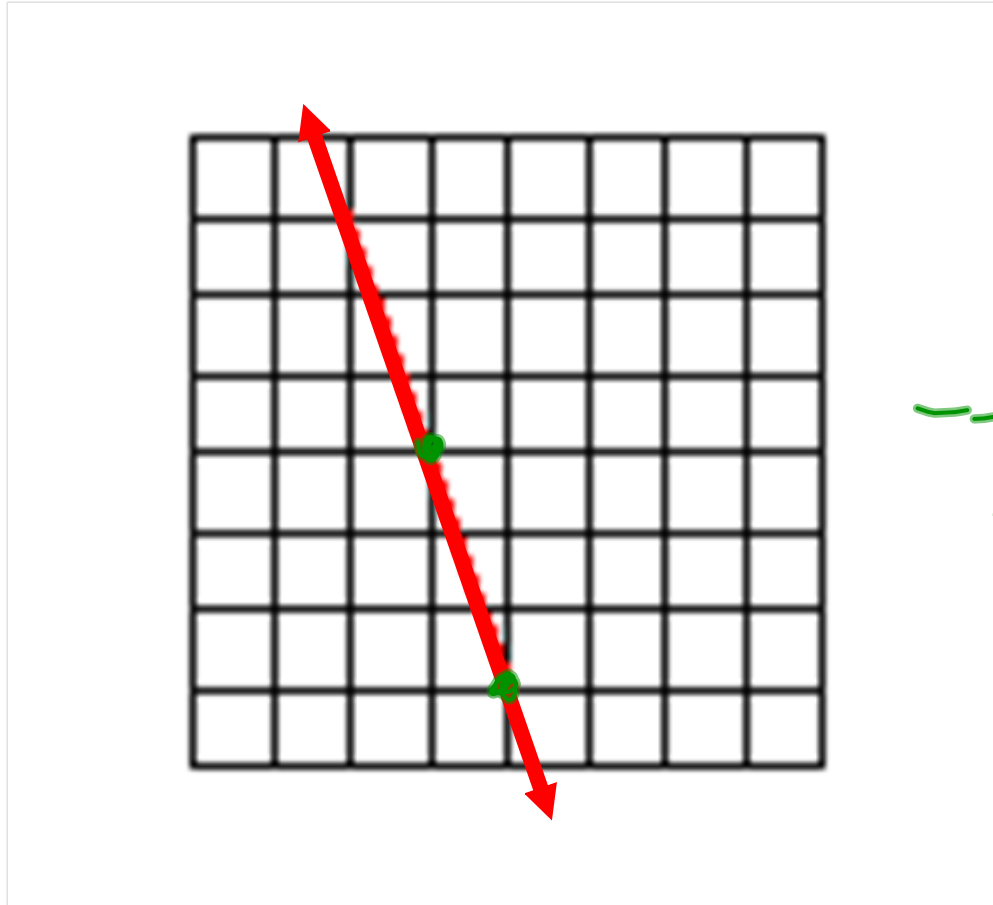
Chapter 5 Review

Linear Equations

Find the slope of this line.

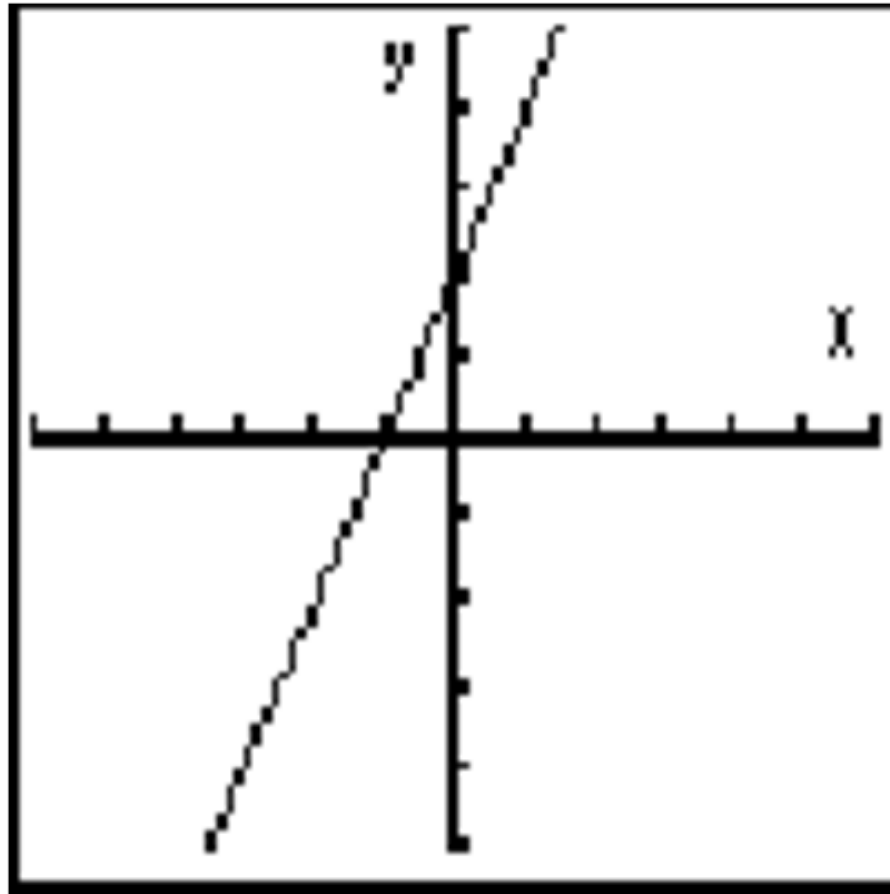


Find the slope of this line



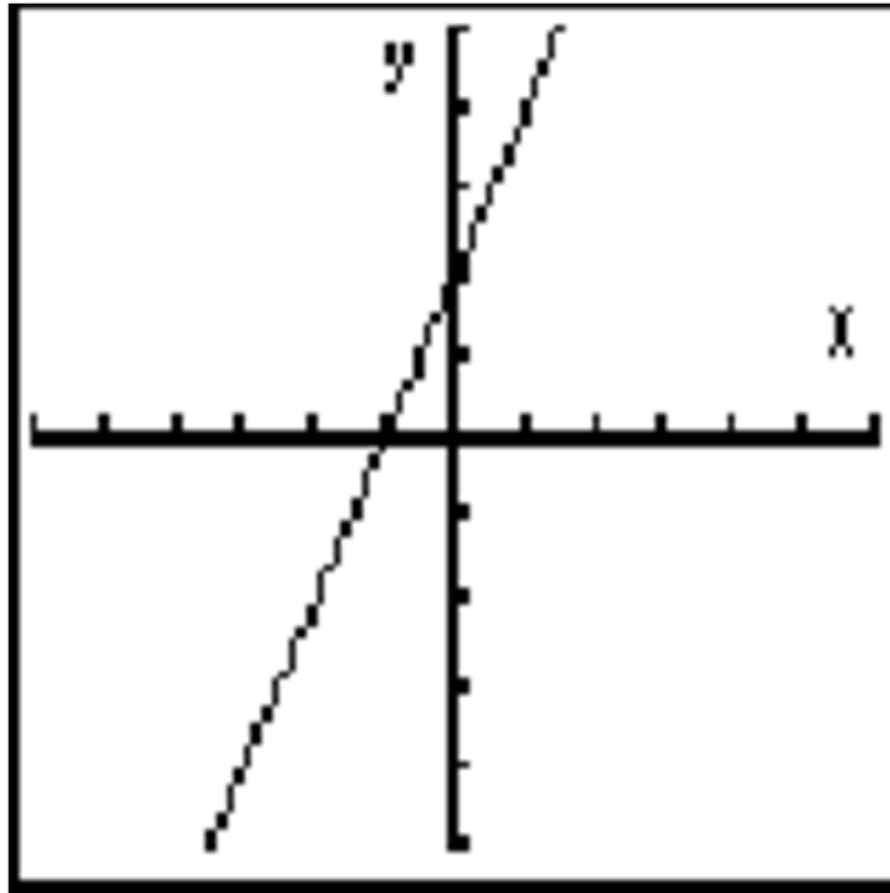
$$-\frac{3}{1} = -3$$

What is the y-intercept of this line?



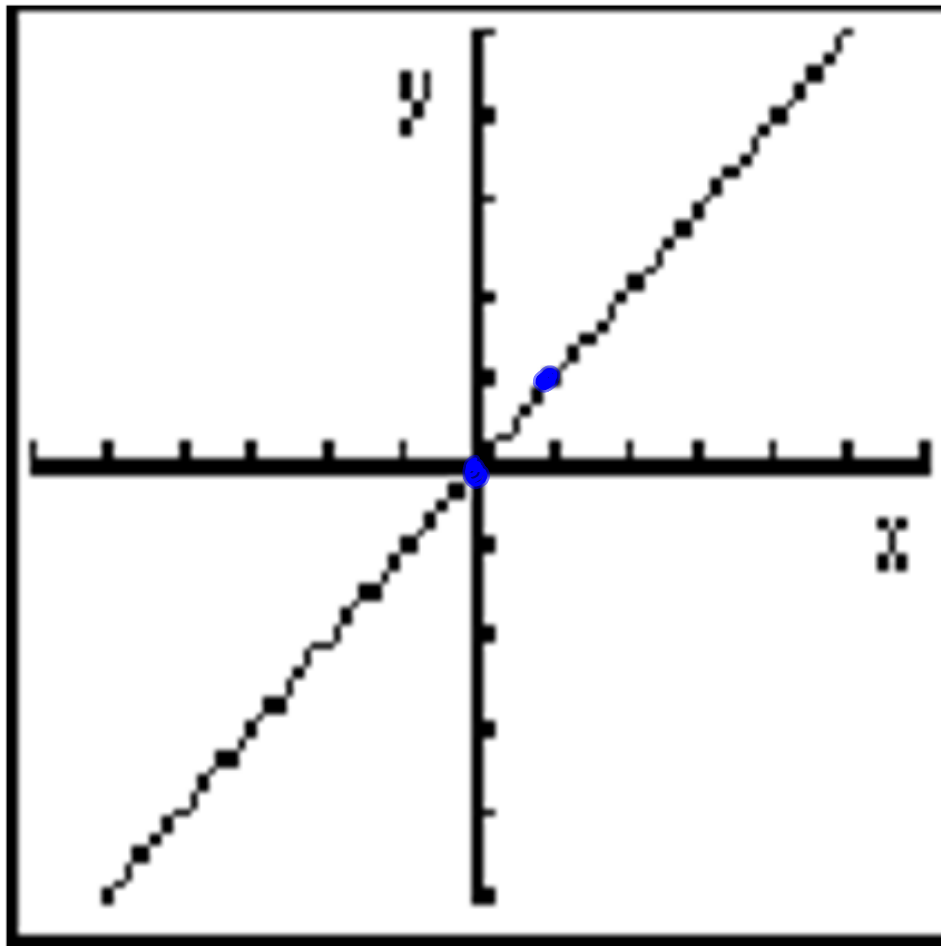
$(0, a)$

What value is the x-intercept of this line?



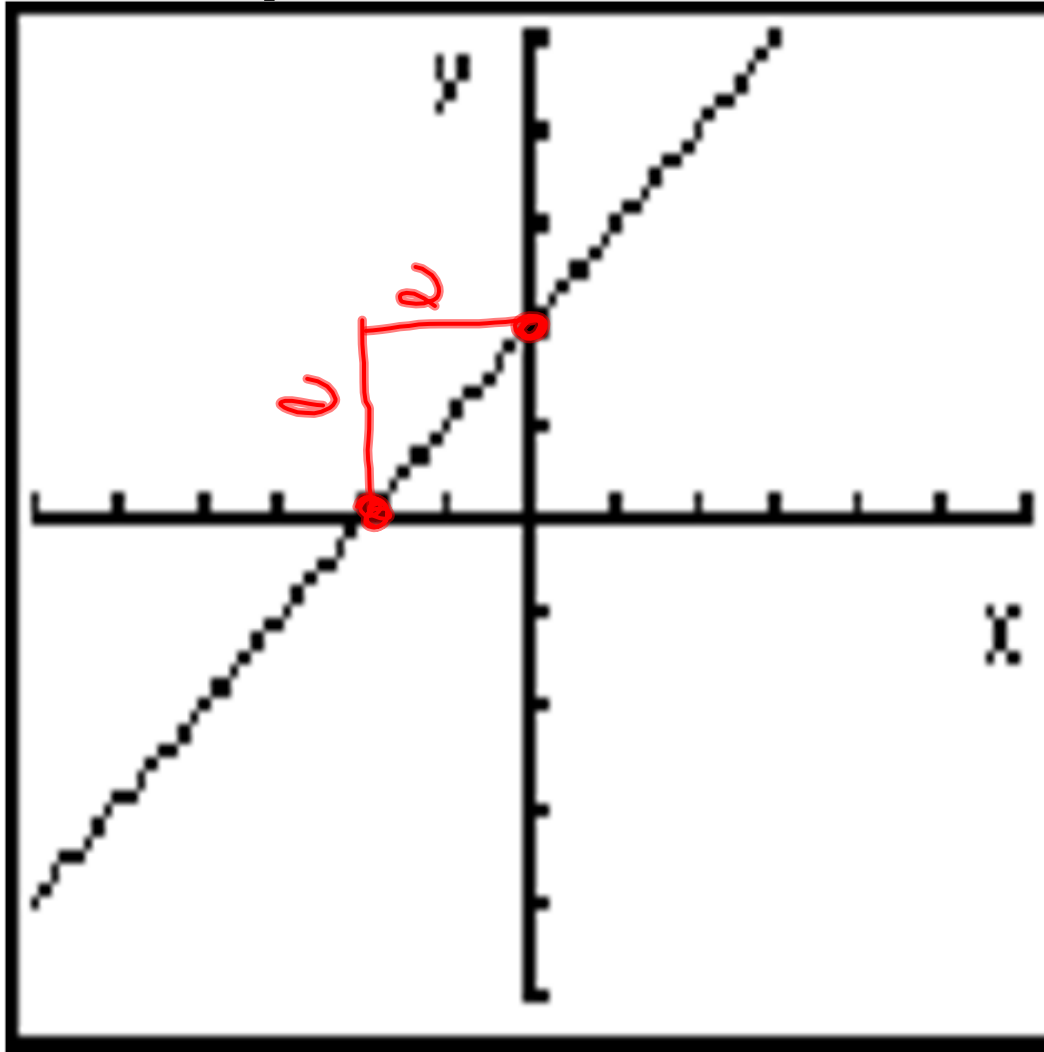
$(-1, 0)$

Find the equation of this line



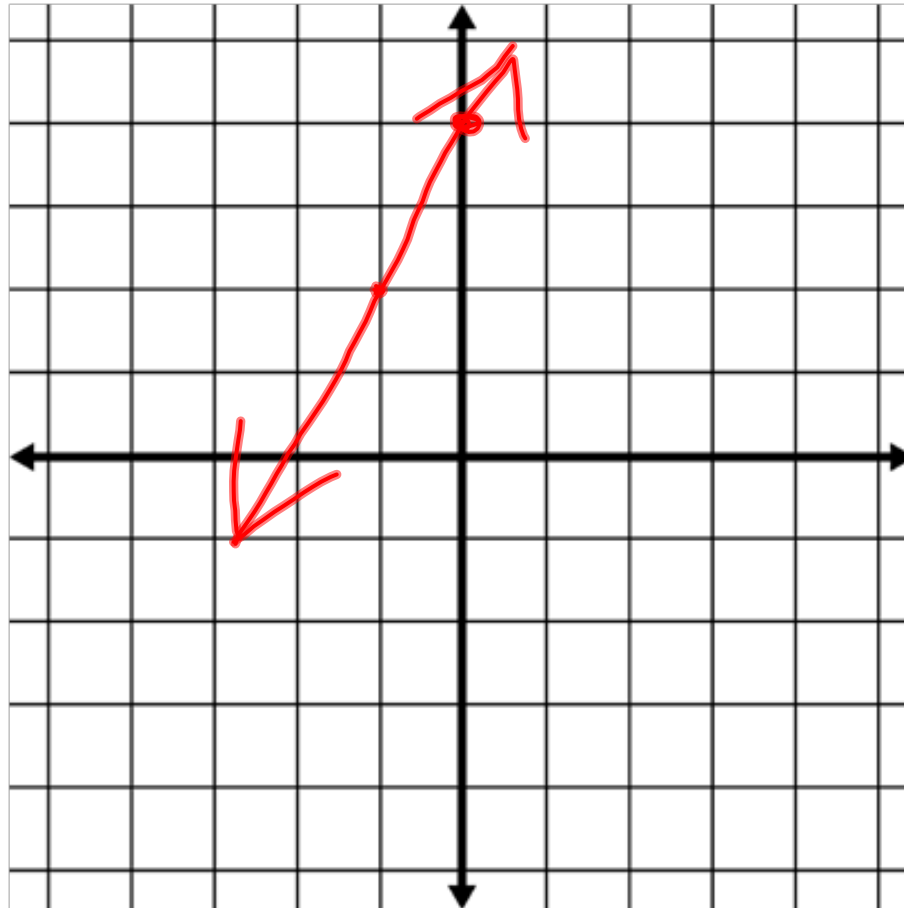
$$y = x + 0$$

Find the equation of this line

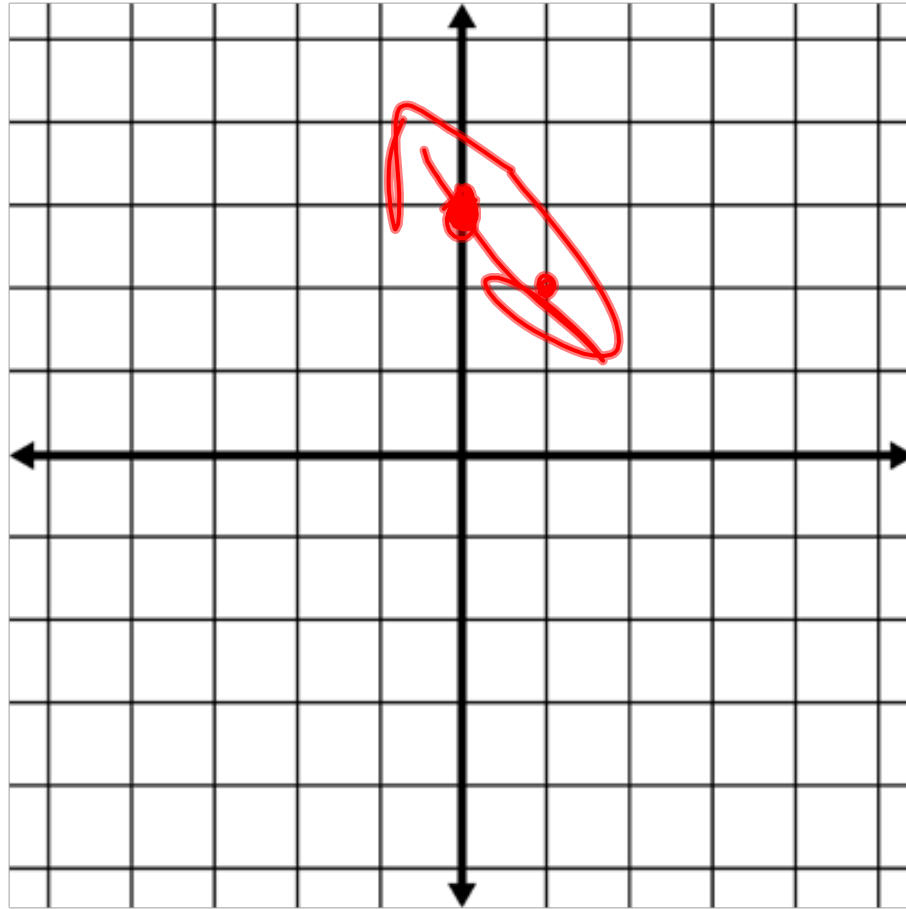


$$y = 1x + 2$$

Draw the graph of the line $y = 2x + 4$



Draw the graph of the line $y = 3 - x$



$$y = -x + 3$$

Define what the slope of a line is. What is the formula for finding slope?

$$m = \frac{\text{rise}}{\text{run}}$$

rate of
change

diff
2

x_1	y_1
x_2	y_2

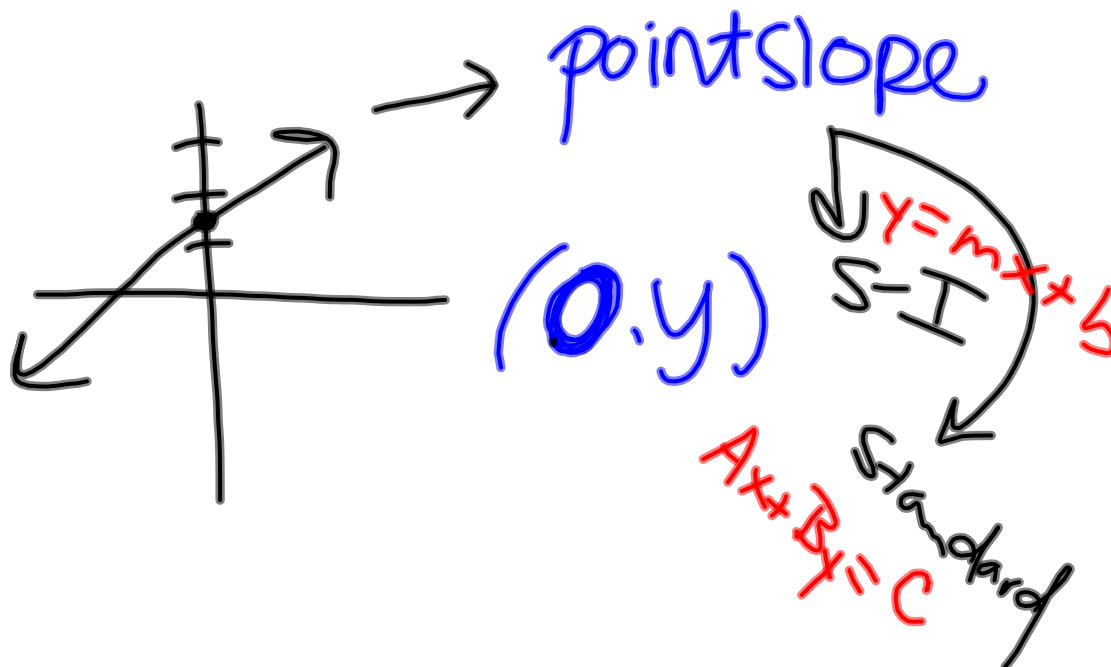
diff
1

$$\frac{\text{diff } 1}{\text{diff } 2}$$

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{y_1 - y_2}{x_1 - x_2}$$

Define what the y-intercept of a line is. How do you find the y-intercept?

pt where line crosses y-axis



$$2x + 3y = 12 \quad \text{what is } y\text{-int?}$$

$(6, 0) \quad (0, 4)$ ←

$$y - 2 = 3(x + 5) \quad \text{what is } y\text{-int?}$$
$$y = 3(x + 5) + 2$$
$$y = 3x + 15 + 2$$
$$y = 3x + 17$$

←

Define what the x -intercept of a line is. How do you find the x -intercept?

Determine slope, x & y-intercepts, and equation of a line for the points (2,5) and (7,-10)

Slope:

Y-intercept:

X-intercept:

Equation of line:

Determine the equation of a line for the points $(-1,3)$ and $(-3,-1)$

In terms of slope and y-intercept:

Two lines are parallel if

Two lines are perpendicular if

Two lines are the same line if

What is the slope & y-intercept of the line:
 $3y = 6x + 15$

What is the slope & y-intercept of the line:
 $y - 12 = \frac{2}{3}(x + 9)$

What is the slope & y-intercept of the line:
 $5x - 7y = 42$

Write an equation of a line that is parallel
and one that is perpendicular to:

$$y = 3x + 5$$

and passes through the point
(1,2)

Parallel:

Perpendicular:

Write the equation of a:

Vertical line:

Horizontal line:

Write the equation of a line that:

Does NOT have a y-intercept:

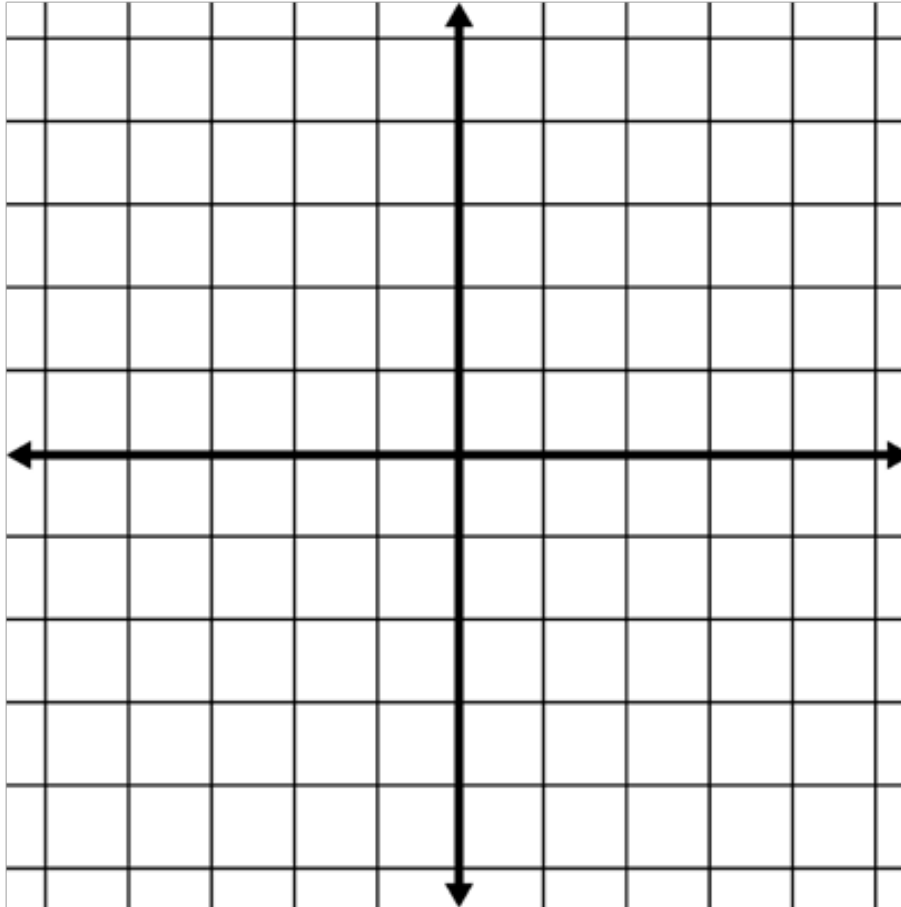
Does NOT have an x-intercept:

What is the slope of:

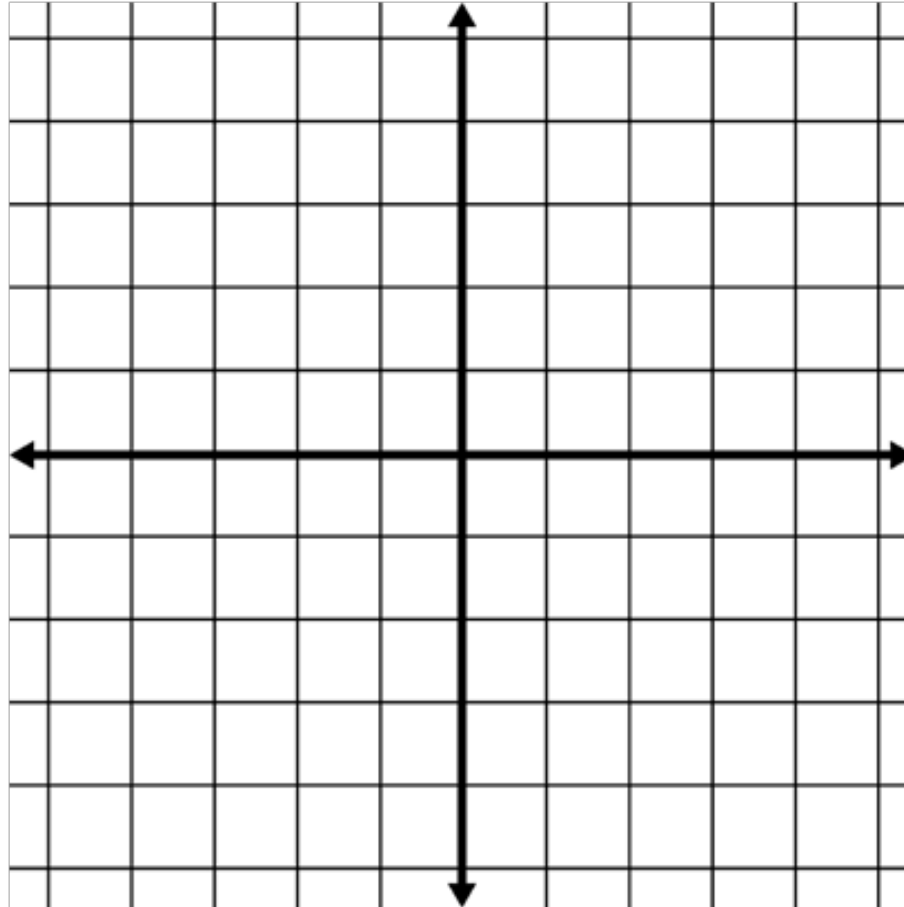
A vertical line?

A horizontal line?

Graph $6y + 6x = 24$



Graph $y + 3 = \frac{2}{3} (X - 1)$

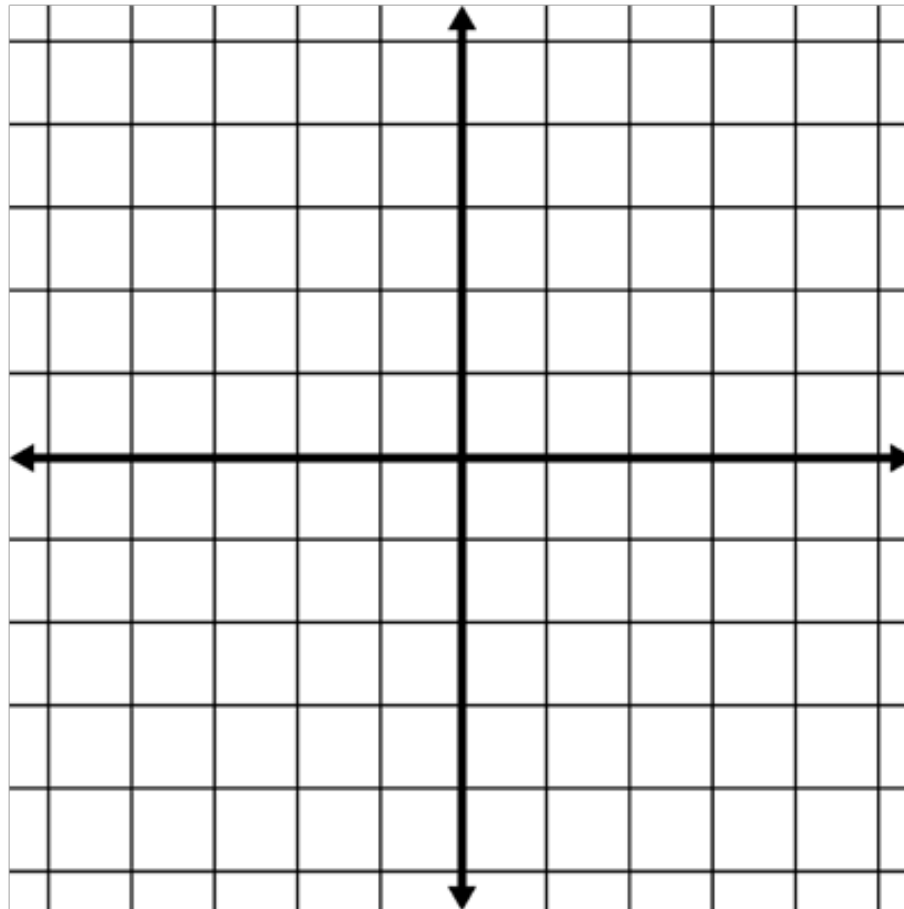


Identify what form if any each equation is in:

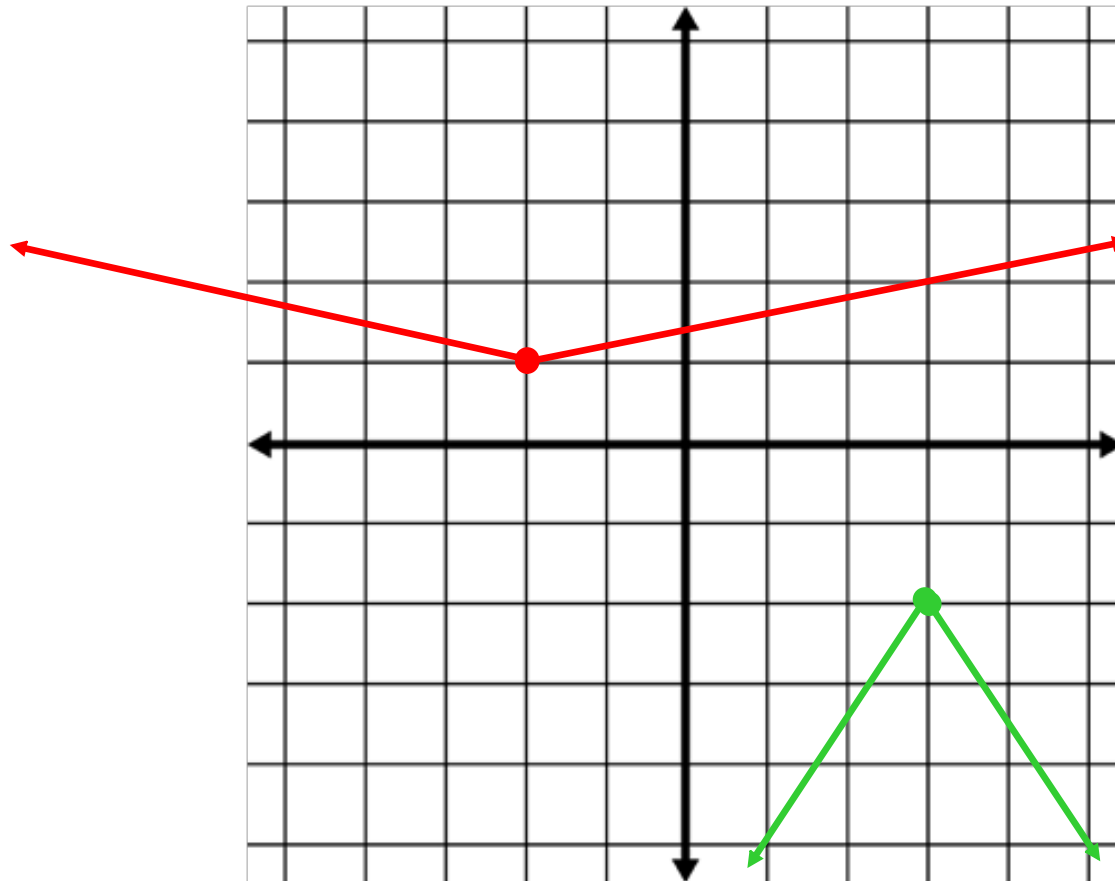
- $Y = 4x - 5$
- $\frac{2}{3}x + \frac{3}{5}y = \frac{1}{9}$
- $Y - 7 = \frac{1}{2}(x + 3)$
- $2.5x - 3.7y = 12$
- $Y + 5 - x = 8$
- $3x - 5y = 9$

Graph the following equations:

$$y = 4|x - 5| + 3 \quad \text{and} \quad y = -\frac{2}{3}|x + 3| - 2$$



Identify the equation of the graphs below.



What is the equation of the translation of the equation that is 4 units up and 5 units to the left from:

$$Y = 4 | x + 3 | - 6$$

$Y = 4 | x + 8 | - 2$

Identify the following for the equation:

$$y = -\frac{1}{2} |x + 3| + 4$$

- Vertex $(-3, 4)$
 - Direction \downarrow
 - Shape compared to $y = |x|$ **WIDER**
 - Y-intercept $(0, 3.5)$
 - X-intercept $(-5, 0)$ $(-1, 0)$
 - Line of symmetry $x = -3$
- Handwritten work includes the following equations and steps:
- $y = -\frac{1}{2} |x + 3| + 4$
 - $y = -\frac{1}{2} |0 + 3| + 4$
 - $y = 2.5$
 - $8 = x + 3$
 - $5 = x$
 - $-4 = -\frac{1}{2} |x + 3|$
 - $2 = \frac{1}{2}$

Identify the following for the equation:

$$y = -\frac{1}{2} |x + 3| + 4$$

y-int
 (0, y)
 let $x = 0$
 $y = -\frac{1}{2} |0 + 3| + 4$
 $= -\frac{1}{2} |3| + 4$
 $= -\frac{1}{2} (3) + 4$
 $= -\frac{3}{2} + 4 = 2.5$

x-int (x, 0)
 let $y = 0$
 $0 = -\frac{1}{2} |x + 3| + 4$
 $\underline{-4}$
 $-4 = -\frac{1}{2} |x + 3|$
 $\underline{-2}$
 $8 = |x + 3|$
 $x = 5, -11$

Explain how to use the slope-intercept form of a line to graph it.

$$y = mx + b$$

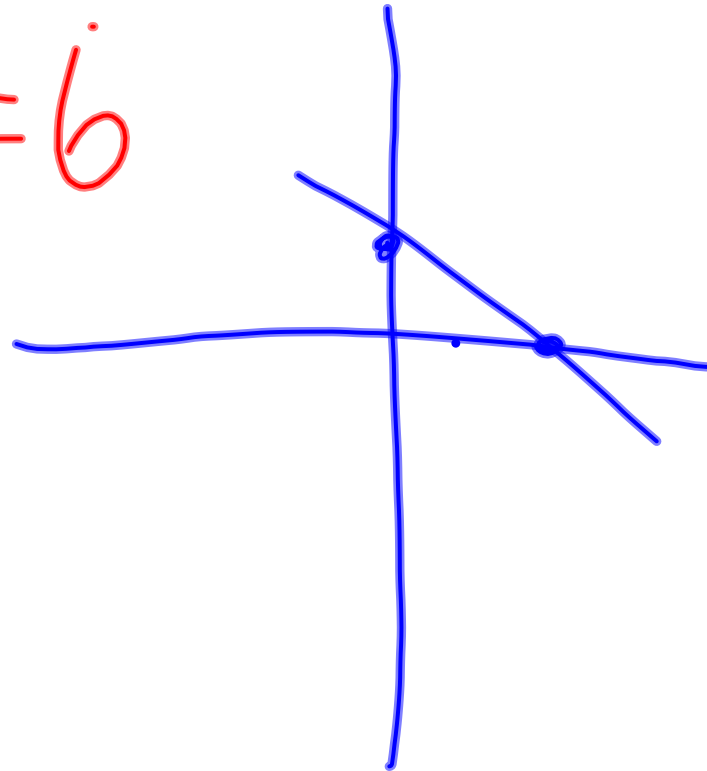
$$y = 4x + 3$$



Explain how to use the standard form of a line to graph it.

$$2x + 3y = 6$$

$(0, 2)$
 $(3, 0)$



Explain how to use the point-slope form of a line to graph it.

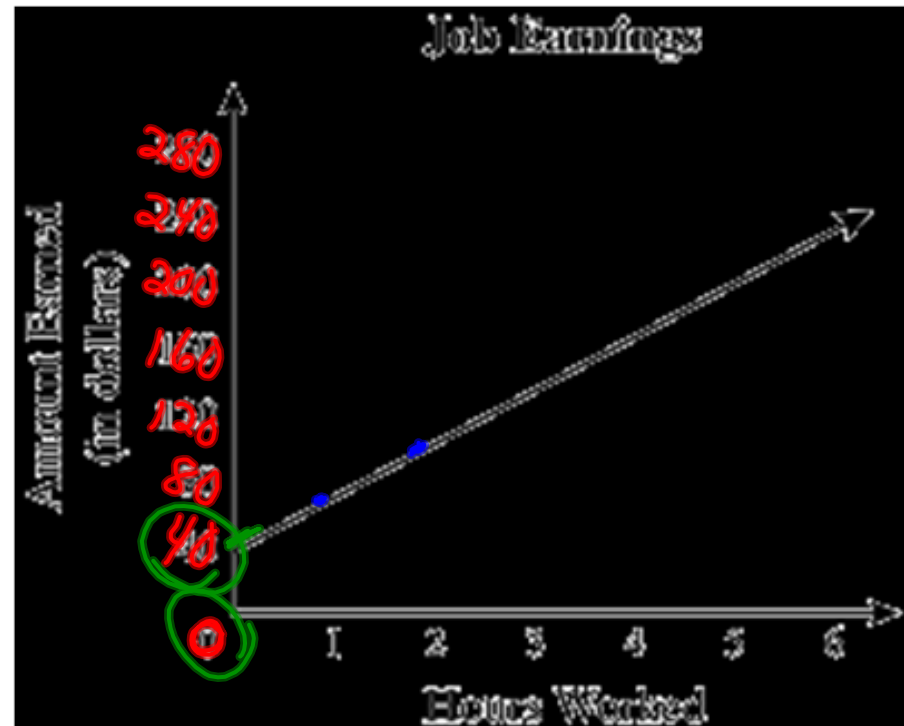
$$y - y_1 = m(x - x_1)$$

$$y - 2 = 3(x - 4)$$



An electrician charges a fixed rate plus an hourly labor charge for a service call. The graph below shows the amount of money an electrician earns based on the number of hours spent on a job. Based on the graph, what is the amount of the fixed rate?

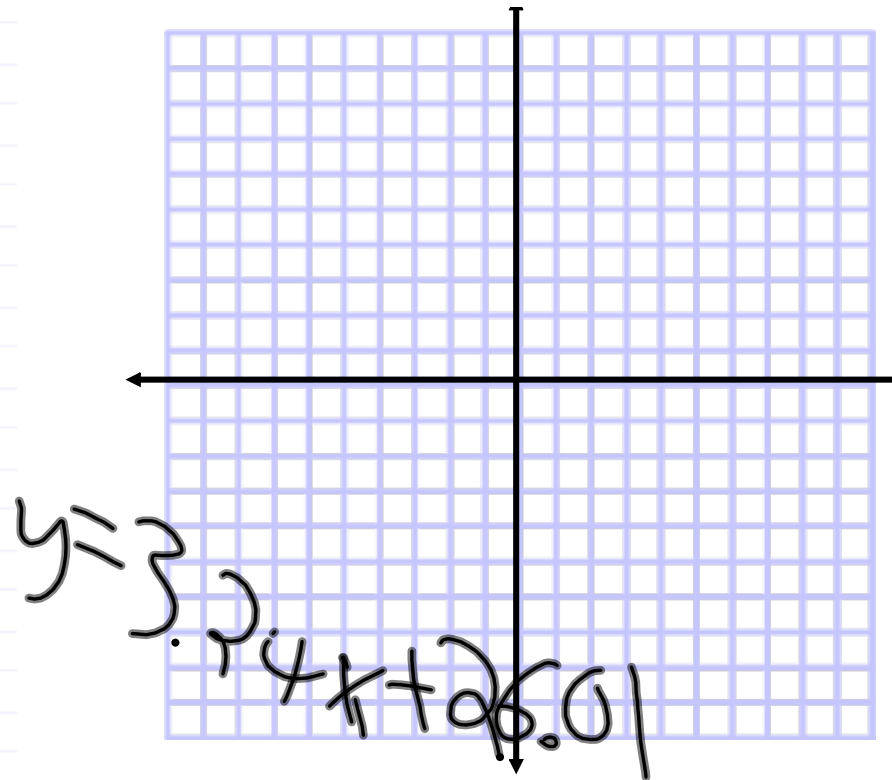
$$Y = 40x + 40$$



A rental car company charges a one-time fee of \$20. They also charge a fee of \$0.10 for each mile the car is driven. Write the equation of the line that represents the relationship between the cost in dollars of the rental car and the number of miles the car is driven?

$$y = .10x + 20$$

Chirps/Second	Temperature (° F)
20.0	88.6
16.0	71.6
19.8	93.3
18.4	84.3
17.1	80.6
15.5	75.2
14.7	69.7
17.1	82.0
15.4	69.4
16.2	83.3
15.0	78.6
17.2	82.6
16.0	80.6
17.0	83.5
14.1	76.3



- Determine a linear regression model equation to represent this data.
- Graph the new equation.
- Decide whether the new equation is a "good fit" to represent this data.
- Extrapolate data: If the ground temperature reached 95° , then at what approximate rate would you expect the crickets to be chirping?
- Interpolate data: With a listening device, you discovered that on a particular morning the crickets were chirping at a rate of 18 chirps per second. What was the approximate ground temperature that morning?
- If the ground temperature should drop to freezing (32° F), what happens to the cricket's chirping?

Answers in this problem are to be rounded to the *nearest thousandth*.

