2.3 + 2.4 Graphing lines

1) plot pts
2) x- & y-intercepts
3) $y = mx + b$

slope y-intercept

$$\frac{3y-7}{2} = (3x^2+1)^2$$

$$3y-7 = 6x^2+2$$

$$\frac{3y}{3} = \frac{6x^2}{3}+\frac{9}{3}$$

$$f(x) = y = 2x^2+3$$

$$f(x) = x^2+2$$

$$g(a) = a^3-3a$$

h

j

8

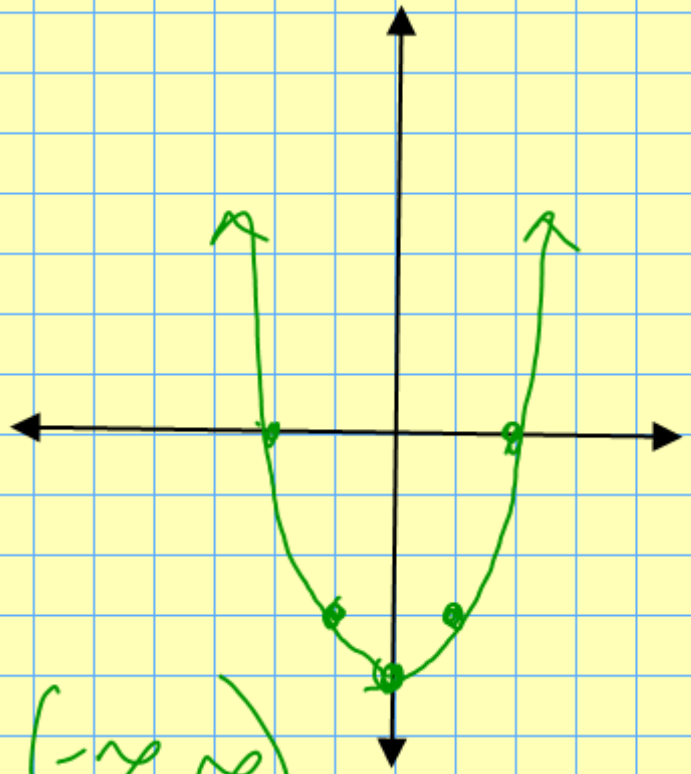
$$f(-2) = (-2)^2 - 3(-2) + 2$$
$$= 4 + 6 + 2$$
$$= 12$$

9 25

10 5

11) a) $y = x^2 - 4$

x	y
-1	-3
0	-4
1	-3
2	0



Domain $(-\infty, \infty)$

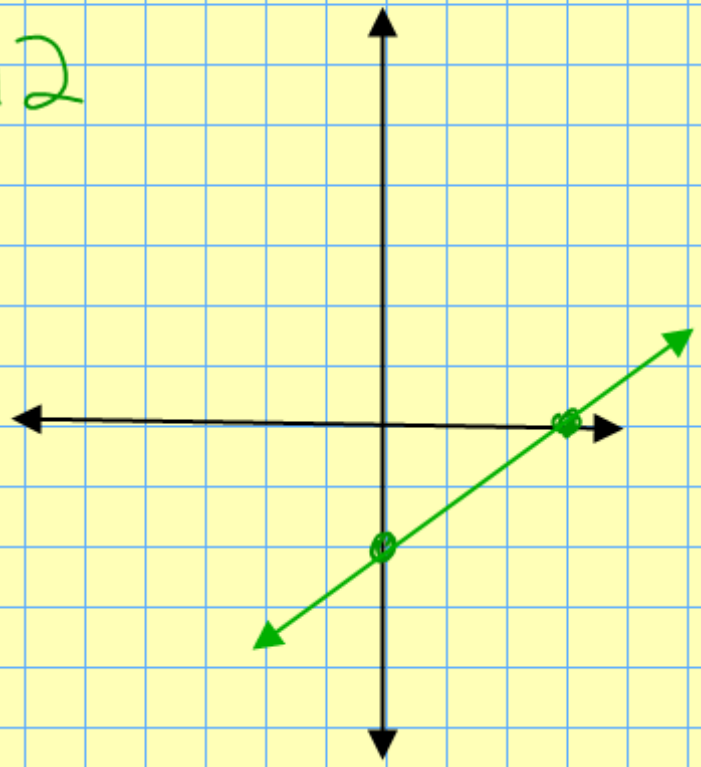
Range $[-4, \infty)$

b) $10 \quad 10 \quad 10$

$0.4x - 0.6y = 1.2$

$4x - 6y = 12$

	x	y
x:	3	0
y:	0	-2



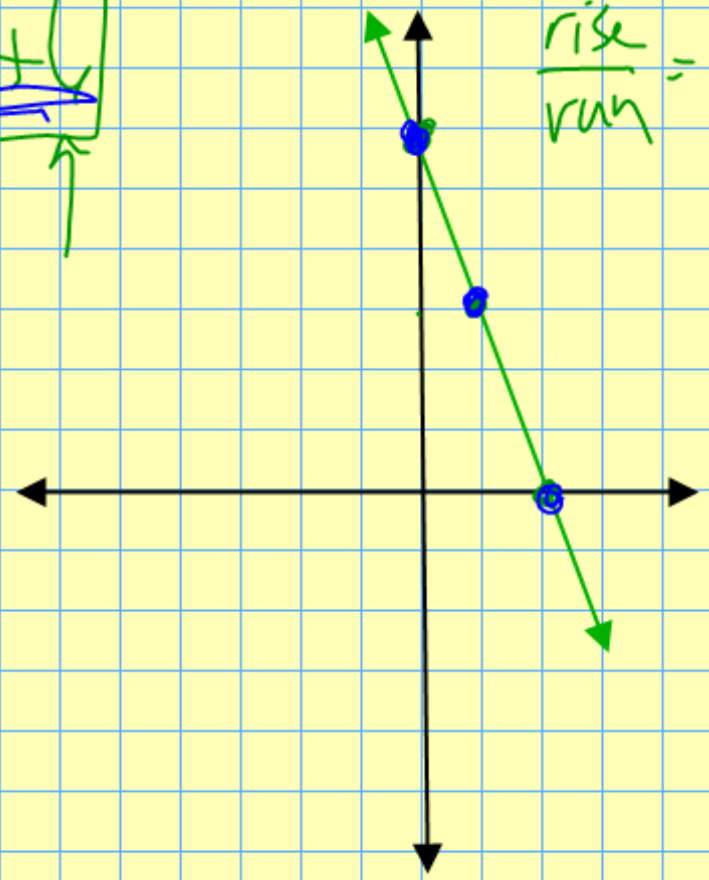
2.4

$f(x) = -3x + 6$

x	y
0	6
2	0

$0 = -3x + 6$

$3x = 6$



$\frac{\text{rise}}{\text{run}} = \frac{-3}{1}$

$12\left(\frac{1}{3}x + 1 = \frac{1}{4}y\right) \rightarrow$

$4\left(\frac{1}{3}x + 1 = \frac{1}{4}y\right)$

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

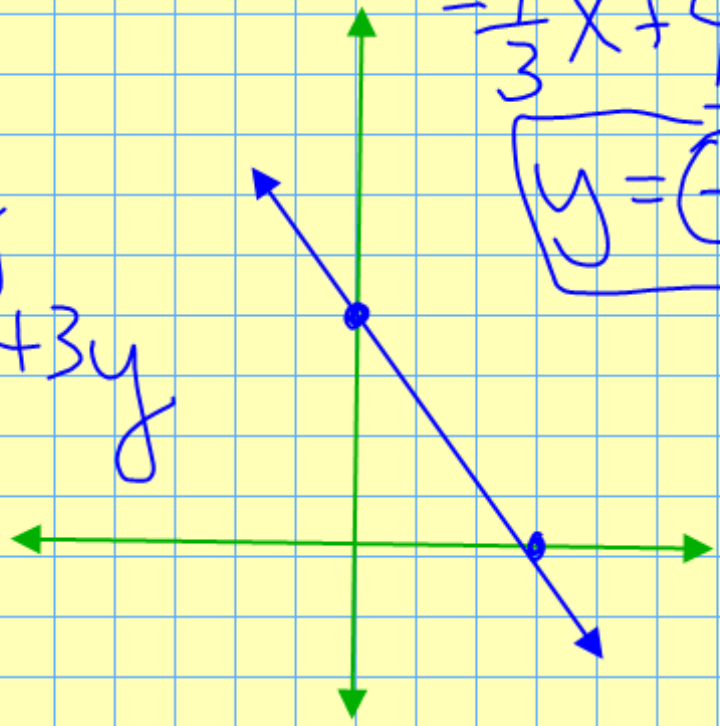
$-\frac{4}{3}x + 4 = y$

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

$-4x + 12 = 3y$

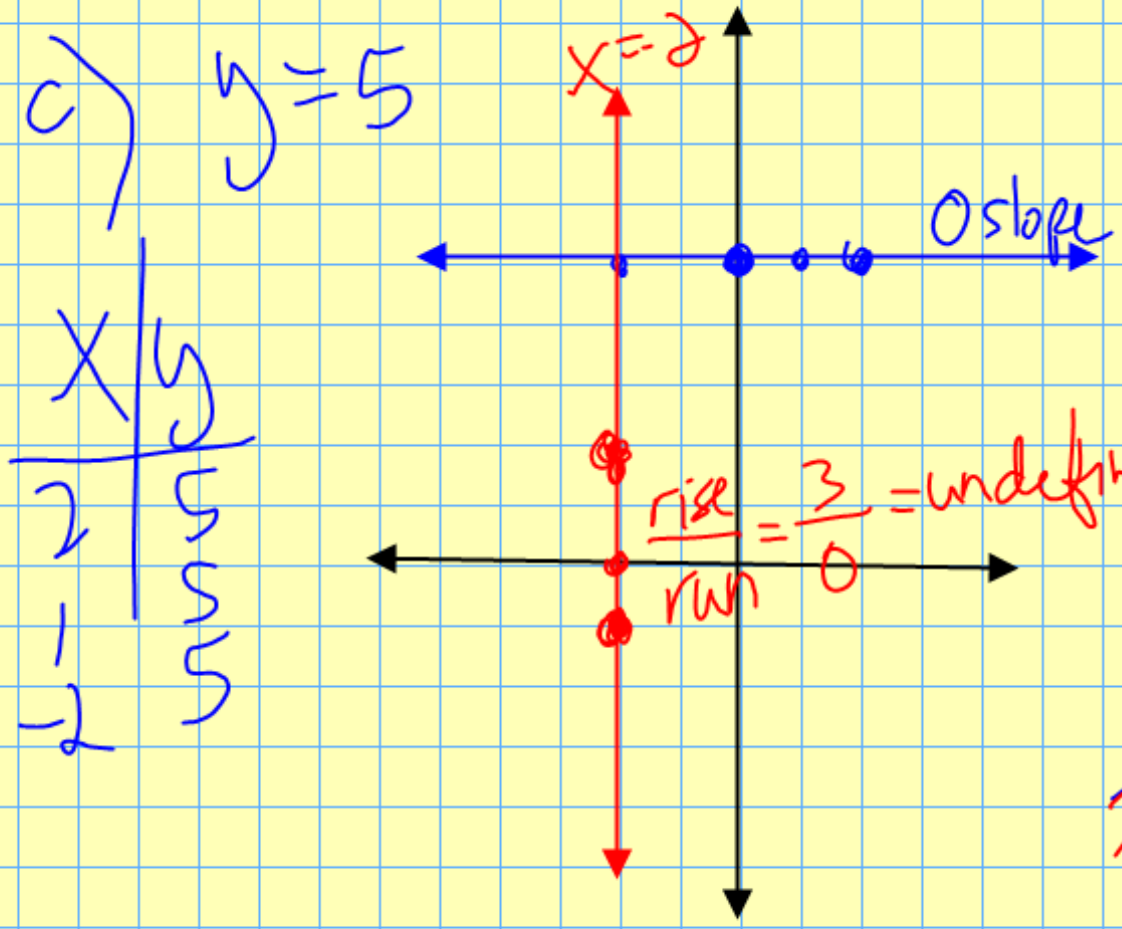
$12 = 4x + 3y$

x	y
0	4
3	0

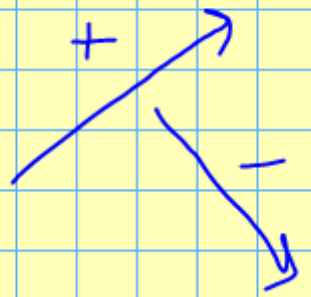


c) $y = 5$

x	y
2	5
1	5
−2	5



$m = \frac{\text{rise}}{\text{run}} = \frac{0}{2} = 0$

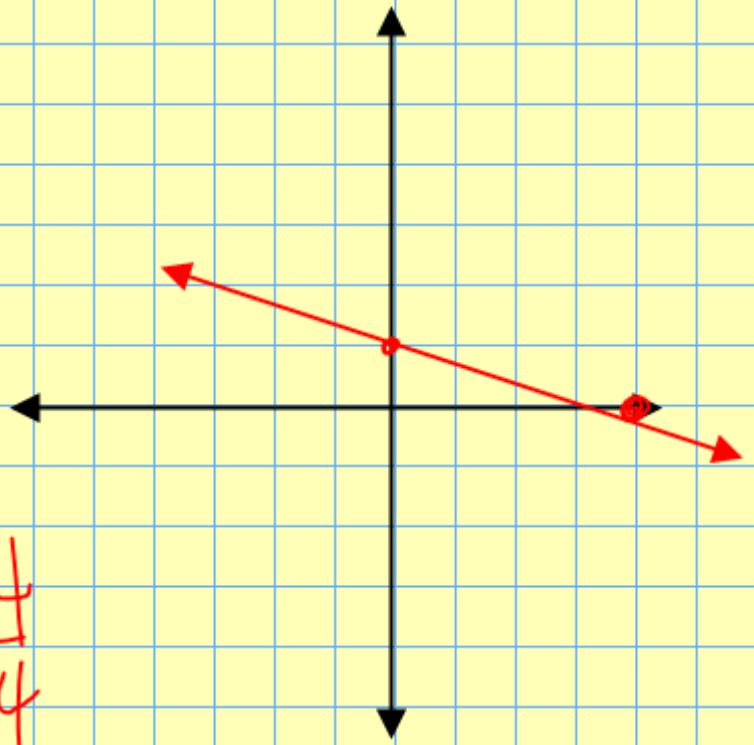


~~x~~ $= -2$

x	y
−2	
−2	
−2	

d) $\frac{2}{2}x + \frac{2}{2}y = \frac{2}{2}$

$x + 4y = 4$



x	y
0	1
4	0

$\frac{4y}{4} = \frac{-x}{4} + \frac{4}{4}$

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

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2.3 Function Notation and Applications

Overview

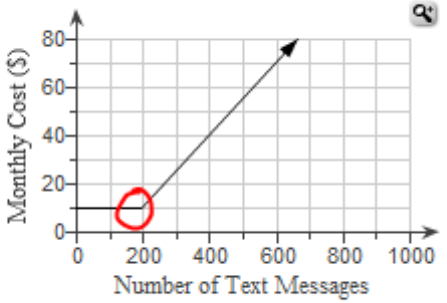
Objective: Interpret graphs of functions.

21 22 23 24 25 26 27 28 29 30

2.3.25

4 correct | 0 of 36 complete

The graph of the function shown illustrates a text messaging plan offered by a cell phone company. Use the graph to complete parts (a) through (e) below.



a. Under this plan, what is the monthly cost for the first 200 text messages?

The monthly cost is $.

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Enter any number or expression in the edit field, then click Check Answer.

5 parts remaining

Clear All | Check Answer | Close

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2.3 Function Notation and Applications

Overview

Objective: Interpret graphs of functions.

21 22 23 24 25 26 27 28 29 30

2.3.27

4 correct | 0 of 36 complete

The graph of the function shown to the right illustrates a certain stock market index for the year 2008. Each tic mark on the horizontal axis represents the first opening day of the market for that given month. Use the graph to answer parts (a) through (h) below.

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a. Over which month(s) did the index increase? Select all that apply.

- A. June
- B. July
- C. May
- D. October
- E. November
- F. April
- G. January
- H. March

Rise 30$
Run 200 texts
= .15$/text

Click to select your answer(s), then click Check Answer.

7 parts remaining

Clear All | Check Answer | Close

2.3 + 2.4

Graphing Lines

1) plot pts
2) intercepts
3) $y = mx + b$ → slope-intercept

(1)

$$\frac{3y-7}{2} = 3x^2+1$$

$$3y-7 = 6x^2+2$$

$$\frac{3y}{3} = \frac{6x^2+9}{3}$$

$$f(x) = y = 2x^2+3$$

$$f(x) = 2x^2+3$$

$$g(a) = 5a^2+2a$$

h

j

8 $f(-2) = (-2)^2 - 3(-2) + 2$

$= 4 + 6 + 2$

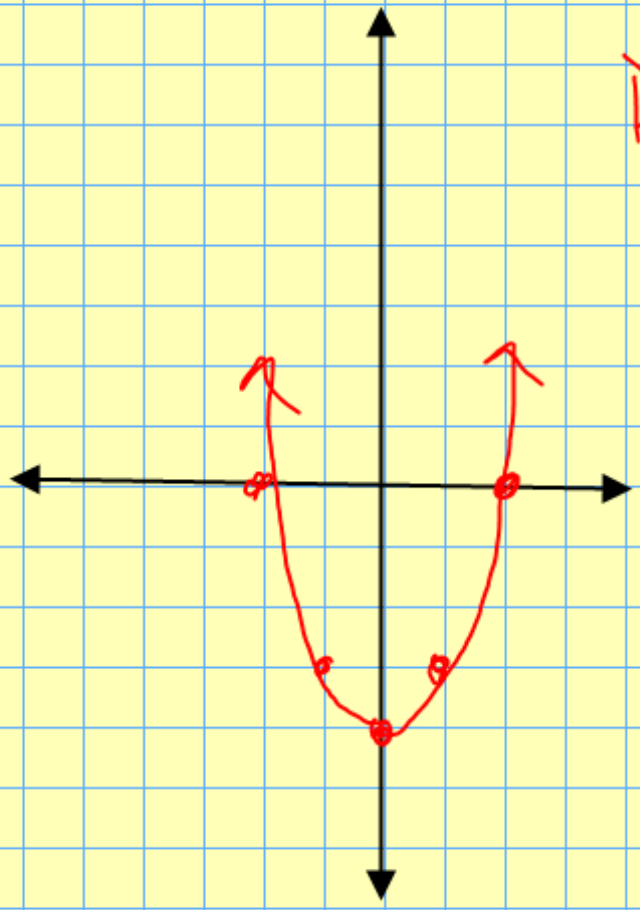
$= 12$

9 25

10 5

11) a) $y = x^2 - 4$

x	y
-1	-3
0	-4
1	-3
2	0



Domain $(-\infty, \infty)$

Range $[-4, \infty)$

b) $10 \quad 10 \quad 10$

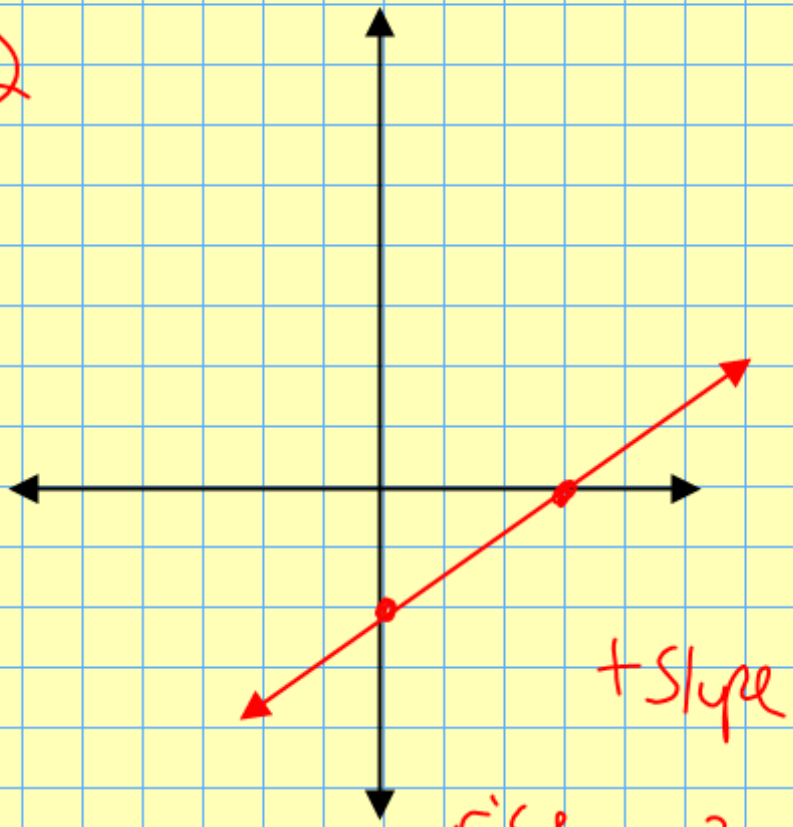
$0.4x - 0.6y = 1.2$

$4x - 6y = 12$

x	y
0	-2
3	0

$-6y = 12$

$4x = 12$



+ slope

$\frac{\text{rise}}{\text{run}} = \frac{2}{3}$

2.4
a)

$mx+b$

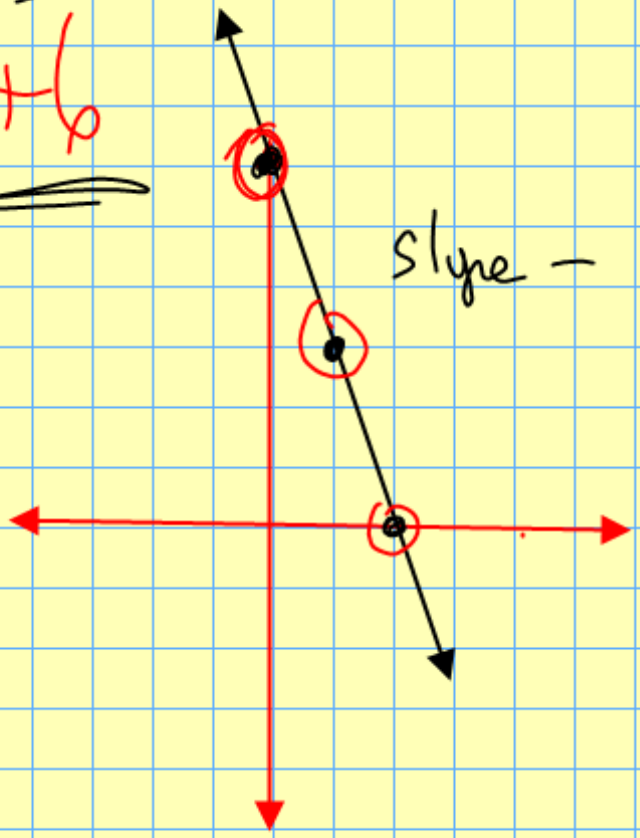
$f(x) = -3x+6$

x	y
0	6
2	0

$0 = -3x+6$

$3x = 6$

$x = 2$



b) $\frac{1}{3}x + 1 = \frac{1}{4}y$ (×12)

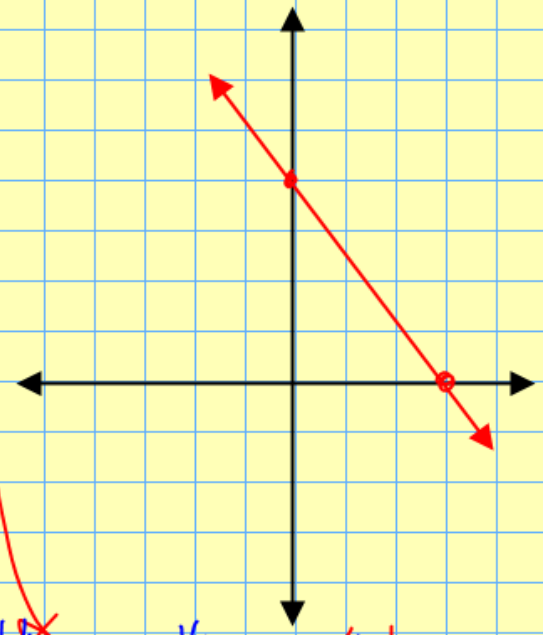
$-4x + 12 = 3y$

$12 = 4x + 3y$

x	y
y: 0	4
x: 3	0

$3y = 12$

$4x = 12$



$-\frac{1}{3}x + 1 = \frac{1}{4}y$ (×12)

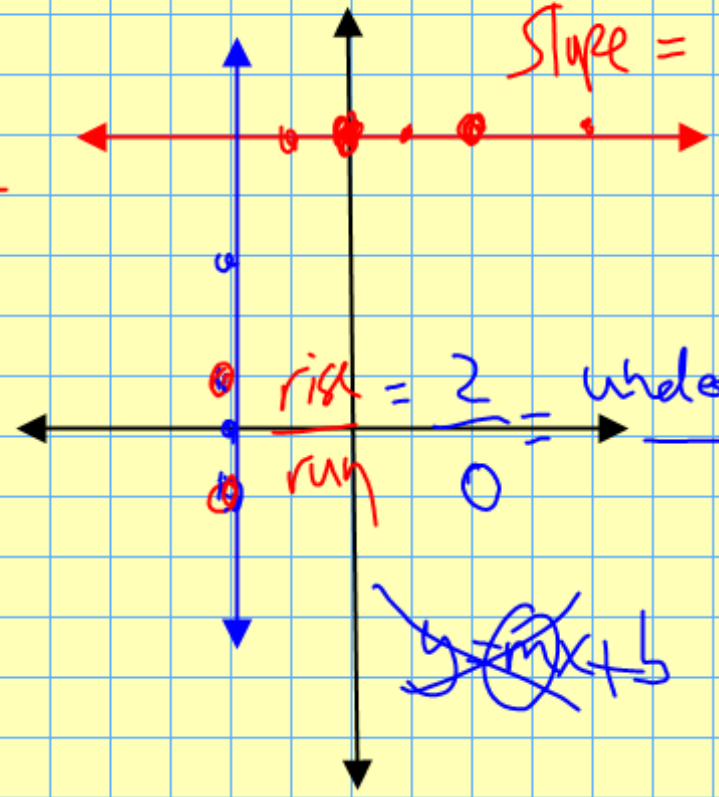
$-4x + 12 = 3y$

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

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

c) $y = 5$

x	y
-1	5
0	5
1	5



Slope $= \frac{\text{rise}}{\text{run}} = \frac{0}{2} = 0$

rise $= 2$, run $= 0$, $= \frac{2}{0} =$ undefined

$y = mx + b$

$y = 0x + 5$

$x = -2$

x	y
-2	0
-2	1
-2	2

$\frac{1}{2}x + 24$

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2.3 Function Notation and Applications

Overview

Objective: Interpret graphs of functions.

21 22 23 24 25 26 27 28 29 30

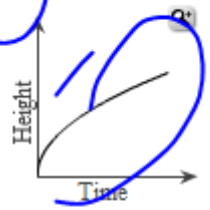
2.3.29

4 correct | 2 of 36 complete

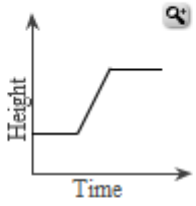
Tyrone fills a round bowl with water at a constant rate. Determine the graph that best represents the height of the water in the bowl as a function of time.

Choose the correct graph below.

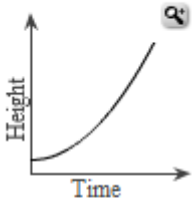
A.



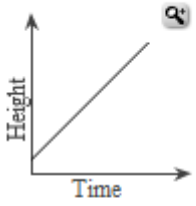
B.



C.



D.



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Click to select your answer, then click Check Answer.

All parts showing

Clear All | Check Answer | Close

$\frac{12}{2} = 6$

$\frac{0}{0} =$ undefined

$\frac{0}{2} = 0$

$\frac{2}{0} =$ undefined

$\frac{10}{2} = 5$

$\frac{0}{2} = 0$

$\frac{2}{0} = \text{und}$

$\frac{0}{0} = \text{undefined}$