

Daily Math

Week 30 (2013-2014)

Mon. March 24, 2014

Tues. March 25, 2014

Wed. March 26, 2014

Thurs. March 27, 2014

Fri. March 28, 2014

Monday, March 24, 2014

1st

Solve for x :

$$\frac{3}{8} = \frac{x}{32}$$

Monday, March 24, 2014

1st

Solve for x :

$$\frac{3}{8} = \frac{x}{32}$$

Answer:

$$\frac{3}{8} = \frac{x}{32}$$

$$3(32) = 8x$$

$$96 = 8x$$

$$96 \div 8 = 8x \div 8$$

$$12 = x$$

Monday, March 24, 2014

2nd

Solve for x :

$$\frac{4x}{3} = \frac{8}{1}$$

Monday, March 24, 2014

2nd

Solve for x :

$$\frac{4x}{3} = \frac{8}{1}$$

Answer:

$$\frac{4x}{3} = \frac{8}{1}$$

$$4x = 24$$

$$4x \div 4 = 24 \div 4$$

$$x = 6$$

Monday, March 24, 2014

3rd

Solve for x :

$$\frac{4+x}{3} = 10$$

Monday, March 24, 2014

3rd

Solve for x :

$$\frac{4+x}{3} = 10$$

Answer:

$$\frac{4+x}{3} = 10$$

$$3 \cdot \left(\frac{4+x}{3} \right) = 3 \cdot (10)$$

$$4 + x = 30$$

$$4 - 4 + x = 30 - 4$$

$$x = 26$$

Monday, March 24, 2014

4th

Solve for x :

$$\frac{2x+2}{8} = \frac{8}{16}$$

Monday, March 24, 2014

4th

Solve for x :

$$\frac{2x+2}{8} = \frac{8}{16}$$

Answer:

$$\frac{2x+2}{8} = \frac{8}{16}$$

$$16(2x + 2) = 64$$

$$32x + 32 = 64$$

$$32x + 32 - 32 = 64 - 32$$

$$32x = 32$$

$$32x \div 32 = 32 \div 32$$

$$x = 1$$

Monday, March 24, 2014

5th

Solve for x :

$$\frac{x + 2}{7} = \frac{15}{5}$$

Monday, March 24, 2014

5th

Solve for x:

$$\frac{x + 2}{7} = \frac{15}{5}$$

Answer: $\frac{x+2}{7} = \frac{15}{5}$

$$5(x + 2) = 105$$

$$5x + 10 - 10 = 105 - 10$$

$$5x = 95$$

$$5x \div 5 = 95 \div 5$$

$$x = 19$$

Monday, March 24, 2014

6th

Solve for x :

$$\frac{9}{4} = \frac{x+1}{8}$$

Monday, March 24, 2014

6th

Solve for x :

$$\frac{9}{4} = \frac{x+1}{8}$$

Answer:

$$\frac{9}{4} = \frac{x+1}{8}$$

$$72 = 4(x + 1)$$

$$72 = 4x + 4$$

$$72 - 4 = 4x + 4 - 4$$

$$68 = 4x$$

$$68 \div 4 = 4x \div 4$$

$$17 = x$$

Monday, March 24, 2014

7th

Solve for x :

$$\frac{x+2}{4} = \frac{9}{2}$$

Monday, March 24, 2014

7th

Solve for x :

$$\frac{x+2}{4} = \frac{9}{2}$$

Answer:

$$\frac{x+2}{4} = \frac{9}{2}$$

$$2(x + 2) = 36$$

$$2x + 4 = 36$$

$$2x + 4 - 4 = 36 - 4$$

$$2x = 32$$

$$**x = 16**$$

Tuesday, March 25, 2014

1st

The record high temperature in Florida is 109°F . The record low is -2°F . What is the *difference* between the records?

Tuesday, March 25, 2014

1st

The record high temperature in Florida is 109°F. The record low is -2°F. What is the *difference* between the records?

$$\begin{aligned} \text{Answer: } & 109 - (-2) \\ & 109 + (+2) \\ & \mathbf{111^\circ\text{F}} \end{aligned}$$

Tuesday, March 25, 2014

2nd

A snail at the bottom of a 10 ft hole crawls up 3 feet each day, but slips back 2 feet each night. How many days will it take for the snail to escape?

Tuesday, March 25, 2014

2nd

A snail at the bottom of a 10 ft hole crawls up 3 feet each day, but slips back 2 feet each night. How many days will it take for the snail to escape?

Answer: **8 days** (see chart below):

Day #	0	1	2	3	4	5	6	7	8
Feet at end of day	10	7	6	5	4	3	2	1	0
Feet after night	10	9	8	7	6	5	4	3	

Tuesday, March 25, 2014

3rd

Nate is training for a triathlon. He runs 3 miles each day. Since he began training, he has run 91 miles. How many weeks has he been training?

Tuesday, March 25, 2014

3rd

Nate is training for a triathlon. He runs 3 miles each day. Since he began training, he has run 91 miles. How many weeks has he been training?

$$\text{Answer: } 91 \text{ miles} \cdot \frac{1 \text{ day}}{3 \text{ miles}} \approx 30.3 \text{ days}$$

$$30.3 \text{ days} \cdot \frac{1 \text{ week}}{7 \text{ days}} \approx \mathbf{4.3 \text{ weeks}}$$

Tuesday, March 25, 2014

4th

A skydiver jumps out of a plane at a height of 5140 feet. He falls 2900 feet before opening his parachute. What height is he at when he opens his chute?

Tuesday, March 25, 2014

4th

A skydiver jumps out of a plane at a height of 5140 feet. He falls 2900 feet before opening his parachute. What height is he at when he opens his chute?

Answer: $5140 \text{ feet} - 2900 \text{ feet}$

2240 feet

Tuesday, March 25, 2014

5th

Lisa gave away 60 balloons everyday during the month of July (31 days). She still had 132 balloons left. How many did she start off with?

Tuesday, March 25, 2014

5th

Lisa gave away 60 balloons everyday during the month of July (31 days). She still had 132 balloons left. How many did she start off with?

Answer: Let x = starting number of balloons

$$x \text{ balloons} - 31 \text{ days} \left(60 \frac{\text{balloons}}{\text{day}} \right) = 132 \text{ balloons}$$

$$x - 1860 = 132$$

$$x - 1860 + 1860 = 132 + 1860$$

$$x = 1992 \text{ balloons}$$

Tuesday, March 25, 2014

6th

The temperature in Salt Lake City rose 2°F every minute for 7 minutes. If the temperature began at -4°F , what was the temperature 7 minutes later?

Tuesday, March 25, 2014

6th

The temperature in Salt Lake City rose 2°F every minute for 7 minutes. If the temperature began at -4°F, what was the temperature 7 minutes later?

Answer:

Beginning + 7 (2°F/minute) = Ending

$$-4 + 7(2) = -4 + 14$$

10°F

Tuesday, March 25, 2014

7th

A scuba diver drops down to a depth of 75 meters below sea level. He then rose 30 meters to an underwater living quarter. How far beneath the surface are the living quarters?

Tuesday, March 25, 2014

7th

A scuba diver drops down to a depth of 75 meters below sea level. He then rose 30 meters to an underwater living quarter. How far beneath the surface are the living quarters?

Answer: Start depth + change = Ending depth
 $-75 \text{ meters} + 30 \text{ meters} = -45 \text{ meters}$

45 meters below the surface

Wednesday, March 26, 2014 1st

Felicia wants to buy 4 new tires. She can spend no more than \$74 per tire. A paper advertises 4 tires on sale for \$320. They usually cost \$359. Can she buy them?

Wednesday, March 26, 2014 1st

Felicia wants to buy 4 new tires. She can spend no more than \$74 per tire. A paper advertises 4 tires on sale for \$320. They usually cost \$359. Can she buy them?

Answer: Budget: 4 tires(\$74) = \$296

Sale Price: \$320

No, Felicia can't afford them.

Wednesday, March 26, 2014

2nd

Cesar is playing Jeopardy. After answering a 200 point question correctly, his score is -500. What was his score before he answered the question?

Wednesday, March 26, 2014 2nd

Cesar is playing Jeopardy. After answering a 200 point question correctly, his score is -500. What was his score before he answered the question?

Answer:

Previous score + 200 points = -500 points

$$p + 200 = -500$$

$$p + 200 - 200 = -500 - 200$$

$$p = -700 \quad \text{Previous score} = -700 \text{ points}$$

Wednesday, March 26, 2014 **3rd**

Melina baked cookies for school. She made 93 cookies total. She kept 24 for her family and took the rest to school. If there are 23 students in class how many did each get?

Wednesday, March 26, 2014 3rd

Melina baked cookies for school. She made 93 cookies total. She kept 24 for her family and took the rest to school. If there are 23 students in class how many did each get?

Answer:

$93 - 24 = 69$ cookies taken to school

$69 \text{ cookies} \div 23 \text{ students} = \mathbf{3 \text{ cookies/student}}$

Wednesday, March 26, 2014 4th

Solve:

$$2x - 1 = 3 - 4(x + 4)$$

Wednesday, March 26, 2014 4th

Solve:

$$2x - 1 = 3 - 4(x + 4)$$

Answer: $2x - 1 = 3 - 4(x + 4)$

$$2x - 1 = 3 - 4x - 16$$

$$2x - 1 = -4x - 13$$

$$2x - 1 + 13 = -4x - 13 + 13$$

$$2x + 12 = -4x$$

$$2x - 2x + 12 = -4x - 2x$$

$$12 = -6x$$

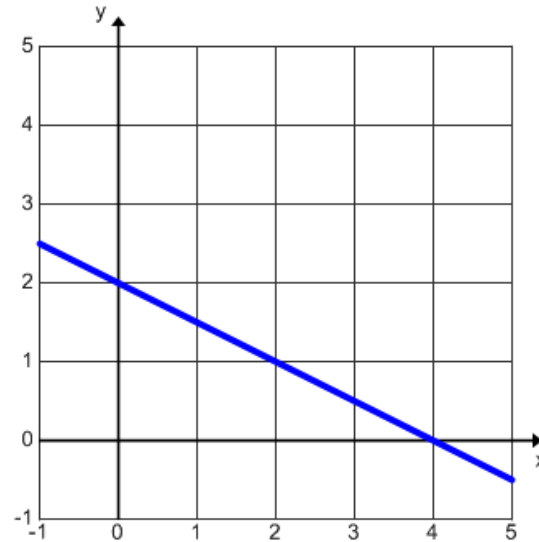
$$12 \div (-6) = -6x \div (-6)$$

$$-2 = x$$

Wednesday, March 26, 2014

5th

What is the y -intercept in this graph?

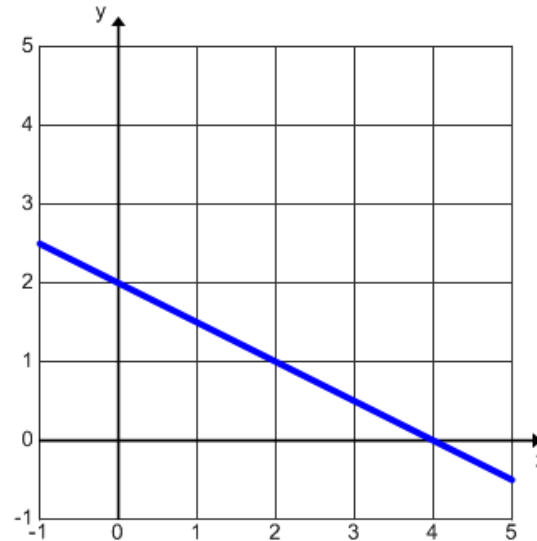


Wednesday, March 26, 2014

5th

What is the y-intercept in this graph?

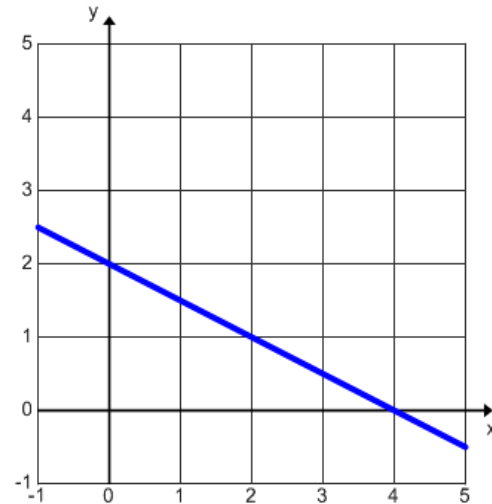
Answer: **(0, 2)**



Wednesday, March 26, 2014

6th

What is the slope of the line shown:



Wednesday, March 26, 2014

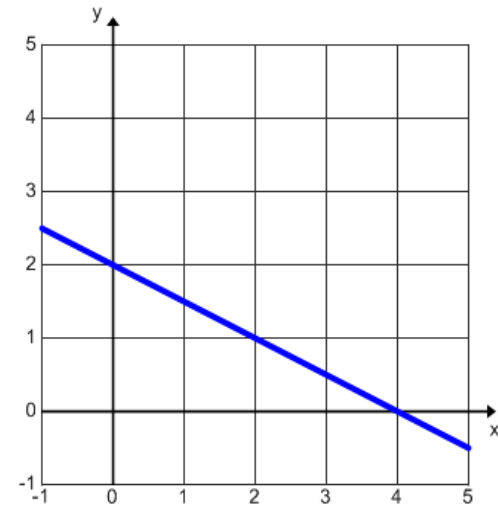
6th

What is the slope of the line shown:

Answer: Choose (0, 2) and (4, 0)

$$\frac{\text{rise}}{\text{run}} = \frac{-2}{+4}$$

$$\text{slope} = -\frac{1}{2}$$



Wednesday, March 26, 2014

7th

Find the slope according to this table:

x	0	2	4	6
y	10	7	4	1

Wednesday, March 26, 2014 7th

Find the slope according to this table:

x	0	2	4	6
y	10	7	4	1

Answer:

$$\begin{aligned}\text{Slope} &= \frac{\text{change in } y}{\text{change in } x} \\ &= \frac{7 - 10}{2 - 0} = \frac{-3}{+2} = -\frac{3}{2}\end{aligned}$$

Thursday, March 27, 2014

1st

Find the slope:

x	1	3	5	7
y	10	20	30	40

Thursday, March 27, 2014

1st

Find the slope:

x	1	3	5	7
y	10	20	30	40

$$\begin{aligned} \text{Answer: Slope} &= \frac{\text{change in } y}{\text{change in } x} \\ &= \frac{20 - 10}{3 - 1} = \frac{+10}{+2} = \mathbf{5} \end{aligned}$$

Thursday, March 27, 2014

2nd

Find the slope:

x	2	4	6
y	6	12	18

Thursday, March 27, 2014

2nd

Find the slope:

x	2	4	6
y	6	12	18

Answer: Slope = $\frac{\text{change in } y}{\text{change in } x}$

$$= \frac{12-6}{4-2} = \frac{+6}{+2} = \mathbf{3}$$

Thursday, March 27, 2014

3rd

Describe a line with the following

slope: $\frac{5}{0}$

Thursday, March 27, 2014

3rd

Describe a line with the following

slope: $\frac{5}{0}$

Answer: **This is a vertical line. It has an undefined slope, because you cannot divide by zero.**

Thursday, March 27, 2014

4th

Find the slope between the two points:
(1,5) and (2,8)

Thursday, March 27, 2014

4th

Find the slope between the two points:
(1,5) and (2,8)

$$\begin{aligned}\text{Answer: Slope} &= \frac{\text{change in } y}{\text{change in } x} \\ &= \frac{8 - 5}{2 - 1} = \frac{+3}{+1} = \mathbf{3}\end{aligned}$$

Thursday, March 27, 2014

5th

What is the slope of the equation $y = \frac{1}{3}x - 2$

Thursday, March 27, 2014

5th

What is the slope of the equation $y = \frac{1}{3}x - 2$

Answer: The linear equation is in “slope-intercept” form ($y = mx + b$), so the slope is m .

$$\text{slope} = \frac{1}{3}$$

Thursday, March 27, 2014

6th

What is the slope of $y = 2x - 5$?

Thursday, March 27, 2014

6th

What is the slope of $y = 2x - 5$?

Answer: The linear equation is in “slope-intercept” form ($y = mx + b$), so the slope is m .

slope = 2

Thursday, March 27, 2014

7th

What is the slope of the equation

$$y = 3x - 2?$$

Thursday, March 27, 2014

7th

What is the slope of the equation

$$y = 3x - 2?$$

Answer: The linear equation is in “slope-intercept” form ($y = mx + b$), so the slope is m .

$$\text{slope} = 3$$

Friday, March 28, 2014

1st

What is the slope of the equation

$$2x - 3y = 7?$$

Friday, March 28, 2014

1st

What is the slope of the equation
 $2x - 3y = 7$?

Answer: First, solve for y :

$$2x - 2x - 3y = 7 - 2x$$

$$-3y = 7 - 2x$$

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

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

Equation is in slope-intercept form.

$$\text{slope} = \frac{2}{3}$$

Friday, March 28, 2014

2nd

What is the slope of $x = -1$?

Friday, March 28, 2014

2nd

What is the slope of $x = -1$?

Answer: This is a vertical line, where the “run” is zero. Since you cannot divide by zero, the **slope is undefined**.

Friday, March 28, 2014

3rd

What is the slope of $y = 7$?

Friday, March 28, 2014

3rd

What is the slope of $y = 7$?

Answer: This is a horizontal line, whose “rise” is zero. The **slope is zero.**

Friday, March 28, 2014

4th

What is the slope of $y = \frac{1}{5}x - 5$?

Friday, March 28, 2014

4th

What is the slope of $y = \frac{1}{5}x - 5$?

Answer: The linear equation is in “slope-intercept” form ($y = mx + b$), so the slope is m .

$$\text{slope} = \frac{1}{5}$$

Friday, March 28, 2014

5th

What is the slope of the line between $(-1,1)$ and $(2,3)$?

Friday, March 28, 2014

5th

What is the slope of the line between (-1,1) and (2,3)?

Answer: Slope = $\frac{\text{change in } y}{\text{change in } x}$

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

Friday, March 28, 2014

6th

What is the slope of the line between
(3,1) and (5,-1)?

Friday, March 28, 2014

6th

What is the slope of the line between (3,1) and (5,-1)?

$$\begin{aligned} \text{Answer: Slope} &= \frac{\text{change in } y}{\text{change in } x} \\ &= \frac{(-1) - 1}{5 - 3} = \frac{-2}{+2} = -1 \end{aligned}$$

Friday, March 28, 2014

7th

What is the slope of the line that goes through $(2,-1)$ and $(4,2)$?

Friday, March 28, 2014

7th

What is the slope of the line that goes through (2,-1) and (4,2)?

$$\begin{aligned} \text{Answer: Slope} &= \frac{\text{change in } y}{\text{change in } x} \\ &= \frac{2 - (-1)}{4 - 2} = \frac{+3}{+2} = \frac{\mathbf{3}}{\mathbf{2}} \end{aligned}$$