

Daily Math

Week 32 (2013-2014)

Mon. April 7, 2014

Tues. April 8, 2014

Wed. April 9, 2014

Thurs. April 10, 2014

Fri. April 11, 2014

Monday, April 7, 2014

1st

State if the table demonstrates a linear or nonlinear relationship. If it is linear, find the slope.

x	3	5	10	13	17
y	8	12	22	28	36

Monday, April 7, 2014

1st

State if the table demonstrates a linear or nonlinear relationship. If it is linear, find the slope.

x	3	5	10	13	17
y	8	12	22	28	36

Answer: Linear relationships have constant slope.

Find one slope: $\frac{12-8}{5-3} = \frac{4}{2} = 2$

Check other slopes: $\frac{28-8}{13-3} = \frac{20}{10} = 2$; $\frac{36-12}{17-5} = \frac{24}{12} = 2$

Slopes are the constant, so **relationship is linear, with slope = 2**

Monday, April 7, 2014

2nd

State if the table demonstrates a linear or nonlinear relationship. If it is linear, find the slope.

x	y
0	400
1	200
2	100
3	50
4	25

Monday, April 7, 2014

2nd

State if the table demonstrates a linear or nonlinear relationship. If it is linear, find the slope.

x	y
0	400
1	200
2	100
3	50
4	25

Answer: Linear relationships have constant slope.

Find one slope: $\frac{200-400}{1-0} = \frac{-200}{1} = -200$

Check another slope: $\frac{50-100}{3-2} = \frac{-50}{1} = -50$

Slopes are NOT constant, so **relationship is non-linear**

Monday, April 7, 2014

3rd

State if the table demonstrates a linear or nonlinear relationship. If it is linear, find the slope.

x	y
-3	-27
1	1
4	64
7	343
13	2197

Monday, April 7, 2014

3rd

State if the table demonstrates a linear or nonlinear relationship. If it is linear, find the slope.

Answer: Compare two slopes:

$$\frac{64-1}{4-1} = \frac{63}{3} = 21; \frac{343-64}{7-4} = \frac{279}{3} = 93$$

Slopes are NOT constant,
so **relationship is non-linear**

x	y
-3	-27
1	1
4	64
7	343
13	2197

Monday, April 7, 2014

4th

State if the table demonstrates a linear or nonlinear relationship. If it is linear, find the slope.

x	0	3	6	9	12
y	4	10	16	22	28

Monday, April 7, 2014

4th

State if the table demonstrates a linear or nonlinear relationship. If it is linear, find the slope.

x	0	3	6	9	12
y	4	10	16	22	28

Answer: Compare some slopes.

$$\frac{10-4}{3-0} = \frac{6}{3} = 2; \frac{22-10}{9-3} = \frac{12}{6} = 2$$

Constant slope, so

relationship is linear, with a slope = 2

Monday, April 7, 2014

5th

State if the table demonstrates a linear or nonlinear relationship. If it is linear, find the slope.

x	y
0	100
5	92
10	84
15	76
20	68

Monday, April 7, 2014

5th

State if the table demonstrates a linear or nonlinear relationship. If it is linear, find the slope.

x	y
0	100
5	92
10	84
15	76
20	68

Answer: Compare some slopes:

$$\frac{92-100}{5-0} = \frac{-8}{5} = -\frac{8}{5}; \quad \frac{76-92}{15-5} = \frac{-16}{10} = -\frac{8}{5}$$

Constant slope, so

relationship is linear, with a slope = 2

Monday, April 7, 2014

6th

State if the table demonstrates a linear or nonlinear relationship. If it is linear, find the slope.

x	0	1	2	3	4
y	50	48	46	44	42

Monday, April 7, 2014

6th

State if the table demonstrates a linear or nonlinear relationship. If it is linear, find the slope.

x	0	1	2	3	4
y	50	48	46	44	42

Answer: Compare slopes:

$$\frac{48-50}{1-0} = \frac{-2}{1} = -2; \frac{42-48}{4-1} = \frac{-6}{3} = -2$$

Slopes are constant,

so **relationship is linear with slope = -2**

Monday, April 7, 2014

7th

State if the table demonstrates a linear or nonlinear relationship. If it is linear, find the slope.

x	0	2	5	8	11
y	7	11	32	71	128

Monday, April 7, 2014

7th

State if the table demonstrates a linear or nonlinear relationship. If it is linear, find the slope.

x	0	2	5	8	11
y	7	11	32	71	128

Answer: Compare slopes:

$$\frac{11-7}{2-0} = \frac{4}{2} = 2; \frac{71-11}{8-2} = \frac{-60}{6} = -10$$

Slopes are constant,

so **relationship is linear with slope = -2**

Tuesday, April 8, 2014

1st

Simplify:

$$2\sqrt{2} + 3\sqrt{2}$$

Tuesday, April 8, 2014

1st

Simplify:

$$2\sqrt{2} + 3\sqrt{2}$$

Answer: $2\sqrt{2} + 3\sqrt{2}$

$$(2 + 3)\sqrt{2}$$

$$5\sqrt{2}$$

Tuesday, April 8, 2014

2nd

Simplify:

$$\sqrt{3} + 4\sqrt{3}$$

Tuesday, April 8, 2014

2nd

Simplify:

$$\sqrt{3} + 4\sqrt{3}$$

Answer: $\sqrt{3} + 4\sqrt{3}$

$$(1 + 4)\sqrt{3}$$

$$5\sqrt{3}$$

Tuesday, April 8, 2014

3rd

Simplify:

$$5\sqrt{2} - \sqrt{2}$$

Tuesday, April 8, 2014

3rd

Simplify:

$$5\sqrt{2} - \sqrt{2}$$

Answer: $5\sqrt{2} - \sqrt{2}$

$$(5 - 1)\sqrt{2}$$

$$4\sqrt{2}$$

Tuesday, April 8, 2014

4th

Simplify:

$$-3\sqrt{5} - 4\sqrt{5}$$

Tuesday, April 8, 2014

4th

Simplify:

$$-3\sqrt{5} - 4\sqrt{5}$$

Answer: $-3\sqrt{5} - 4\sqrt{5}$

$$(-3 - 4)\sqrt{5}$$

$$-7\sqrt{5}$$

Tuesday, April 8, 2014

5th

Simplify:

$$2\sqrt{2} + 3\sqrt{2} + 5\sqrt{3}$$

Tuesday, April 8, 2014

5th

Simplify:

$$2\sqrt{2} + 3\sqrt{2} + 5\sqrt{3}$$

Answer: $2\sqrt{2} + 3\sqrt{2} + 5\sqrt{3}$

$$(2 + 3)\sqrt{2} + 5\sqrt{3}$$

$$5\sqrt{2} + 5\sqrt{3}$$

Tuesday, April 8, 2014

6th

Simplify:

$$-2\sqrt{3} + 4\sqrt{3}$$

Tuesday, April 8, 2014

6th

Simplify:

$$-2\sqrt{3} + 4\sqrt{3}$$

Answer: $-2\sqrt{3} + 4\sqrt{3}$

$$(-2 + 4)\sqrt{3}$$

$$2\sqrt{3}$$

Tuesday, April 8, 2014

7th

Simplify:

$$-3\sqrt{2} + -4\sqrt{2}$$

Tuesday, April 8, 2014

7th

Simplify:

$$-3\sqrt{2} + -4\sqrt{2}$$

Answer: $-2\sqrt{3} + 4\sqrt{3}$

$$(-2 + 4)\sqrt{3}$$

$$2\sqrt{3}$$

Wednesday, April 9, 2014

1st

Simplify:

$$10\sqrt{7} - 4\sqrt{7}$$

Wednesday, April 9, 2014

1st

Simplify:

$$10\sqrt{7} - 4\sqrt{7}$$

Answer:

$$10\sqrt{7} - 4\sqrt{7}$$
$$(10 - 4)\sqrt{7}$$
$$6\sqrt{7}$$

Wednesday, April 9, 2014

2nd

Simplify:

$$-3\sqrt{5} - 4\sqrt{5} + \sqrt{5}$$

Wednesday, April 9, 2014

2nd

Simplify:

$$-3\sqrt{5} - 4\sqrt{5} + \sqrt{5}$$

Answer: $-3\sqrt{5} - 4\sqrt{5} + \sqrt{5}$

$$(-3 - 4 + 1)\sqrt{5}$$

$$-6\sqrt{5}$$

Wednesday, April 9, 2014

3rd

Simplify:

$$-4\sqrt{5} + 4\sqrt{5} + 2\sqrt{5}$$

Wednesday, April 9, 2014

3rd

Simplify:

$$-4\sqrt{5} + 4\sqrt{5} + 2\sqrt{5}$$

Answer: $-4\sqrt{5} + 4\sqrt{5} + 2\sqrt{5}$

$$(-4 + 4 + 2)\sqrt{5}$$

$$2\sqrt{5}$$

Wednesday, April 9, 2014

4th

Evaluate $b^2 - 4a$

when $a = 5$ and $b = 10$

Wednesday, April 9, 2014

4th

Evaluate $b^2 - 4a$

when $a = 5$ and $b = 10$

Answer: $b^2 - 4a$

$$10^2 - 4(5)$$

$$100 - 20$$

80

Wednesday, April 9, 2014

5th

What is the slope of the line that passes through the points $(-1, 4)$ and $(-1, 7)$?

Wednesday, April 9, 2014

5th

What is the slope of the line that passes through the points $(-1, 4)$ and $(-1, 7)$?

Answer: This is a vertical line, which has an **undefined slope**.

$$\left(\frac{7-4}{(-1)-(-1)} = \frac{-3}{0} = ??? \right)$$

Wednesday, April 9, 2014

6th

What is the slope of the line that passes through the points $(2, 5)$ and $(6, 5)$?

Wednesday, April 9, 2014

6th

What is the slope of the line that passes through the points (2, 5) and (6, 5)?

Answer: This is a horizontal line, whose **slope is zero**. $\left(\frac{5-5}{6-2} = \frac{0}{4} = 0\right)$

Wednesday, April 9, 2014

7th

Write the equation of a line with a slope of -2 and a y -intercept of -3.

Wednesday, April 9, 2014

7th

Write the equation of a line with a slope of -2 and a y-intercept of -3.

Answer: $y = -2x - 3$

Thursday, April 10, 2014 **1st**

Write the equation of a line with the slope of -1 and a y -intercept of 4 .

Thursday, April 10, 2014

1st

Write the equation of a line with the slope of -1 and a y-intercept of 4.

Answer: $y = -x + 4$

Thursday, April 10, 2014

2nd

Write the equation of a line with the slope of 1 and an x -intercept of 4.

Thursday, April 10, 2014

2nd

Write the equation of a line with the slope of 1 and an x -intercept of 4.

Answer: Since one point on the line is $(4,0)$ and the slope is 1, we can set up an equation: $1 = \frac{y-0}{x-4}$, where (x,y) is some other point on the line.

The equation simplifies to **$y = x - 4$**

Thursday, April 10, 2014

3rd

Write the equation of a line with the slope of $\frac{1}{3}$ and an x -intercept of -6.

Thursday, April 10, 2014

3rd

Write the equation of a line with the slope of $\frac{1}{3}$ and an x -intercept of -6 .

Answer: Since one point on the line is $(-6,0)$ and the slope is $\frac{1}{3}$, we can set up an equation: $\frac{1}{3} = \frac{y-0}{x-(-6)}$, where (x,y) is some other point on the line. Simplify

the equation: $\frac{1}{3} = \frac{y}{x+6}$

$$x + 6 = 3y$$

$$(x + 6) \div 3 = 3y \div 3$$

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

Thursday, April 10, 2014

4th

Solve: $-3(2q - 1) = 15$

Thursday, April 10, 2014

4th

$$\text{Solve: } -3(2q - 1) = 15$$

$$\text{Answer: } -3(2q - 1) = 15$$

$$-6q + 3 = 15$$

$$-6q + 3 - 3 = 15 - 3$$

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

$$q = -2$$

Thursday, April 10, 2014

5th

Between what two integers does
 $-\sqrt{20}$ lie?

Thursday, April 10, 2014

5th

Between what two integers does $-\sqrt{20}$ lie?

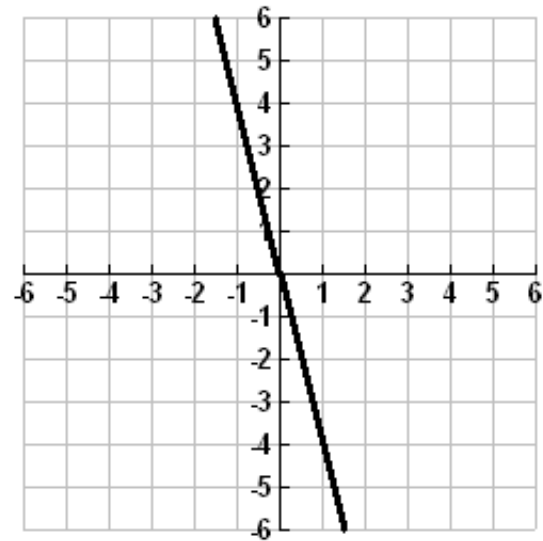
Answer: $-\sqrt{25} < -\sqrt{20} < -\sqrt{16}$

$$-5 < -\sqrt{20} < -4$$

Thursday, April 10, 2014

6th

Write the equation for the line shown in the graph.

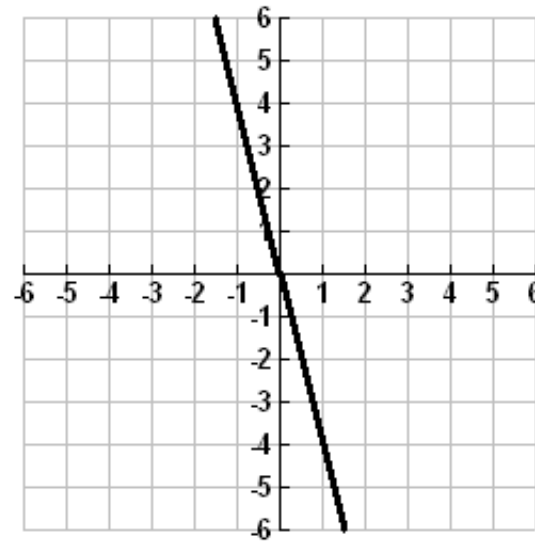


Thursday, April 10, 2014

6th

Write the equation for the line shown in the graph.

Answer: $y = -4x$



Thursday, April 10, 2014

7th

Janet jogs to the gym and burns 435 calories. When she arrives at the gym, she jumps in the pool and begins swimming laps. She burns 10 calories per lap. Write an equation to model the total number of calories, c , Janet burned in her workout if she swims p laps.

Thursday, April 10, 2014

7th

Janet jogs to the gym and burns 435 calories. When she arrives at the gym, she jumps in the pool and begins swimming laps. She burns 10 calories per lap. Write an equation to model the total number of calories, c , Janet burned in her workout if she swims p laps.

Answer: **$435 + 10p = c$**

Friday, April 11, 2014

1st

Fill in the following table:

x	-1	0	1	2	3
y	6	7	8		

Friday, April 11, 2014

1st

Fill in the following table:

x	-1	0	1	2	3
y	6	7	8		

Answer:

x	-1	0	1	2	3
y	6	7	8	9	10

Friday, April 11, 2014

2nd

Fill in the following table:

x	0	1	2	3	100
y	7	8	9	10	

Friday, April 11, 2014

2nd

Fill in the following table:

x	0	1	2	3	100
y	7	8	9	10	

Answer:

x	0	1	2	3	100
y	7	8	9	10	107

Friday, April 11, 2014

3rd

Fill in the following table:

x	3	4	5	6	7
y	-15	-20	-25		

Friday, April 11, 2014

3rd

Fill in the following table:

x	3	4	5	6	7
y	-15	-20	-25		

Answer:

x	3	4	5	6	7
y	-15	-20	-25	-30	-35

Friday, April 11, 2014

4th

Fill in the following table:

x	4	5	6	7	18
y	-20	-25	-30	-35	

Friday, April 11, 2014

4th

Fill in the following table:

x	4	5	6	7	18
y	-20	-25	-30	-35	

Answer:

x	4	5	6	7	18
y	-20	-25	-30	-35	-90

Friday, April 11, 2014

5th

Fill in the following table:

x	3	4	5	6	7
y	11	13	15		

Friday, April 11, 2014

5th

Fill in the following table:

x	3	4	5	6	7
y	11	13	15		

Answer:

x	3	4	5	6	7
y	11	13	15	17	19

Friday, April 11, 2014

6th

Fill in the following table:

x	4	5	6	7	32
y	13	15	17	19	

Friday, April 11, 2014

6th

Fill in the following table:

x	4	5	6	7	32
y	13	15	17	19	

Answer: $(2x + 5)$

x	4	5	6	7	32
y	13	15	17	19	69

Friday, April 11, 2014

7th

Fill in the following table:

x	4	5	6	7	32
y	13	11	9	7	

Friday, April 11, 2014

7th

Fill in the following table:

x	4	5	6	7	32
y	13	11	9	7	

Answer: $(-2x+21)$

x	4	5	6	7	32
y	13	11	9	7	-43