Writing equations of Lines

agenda

Warm-Up (Kahoot)

Notes - 3

Card Sort

HW: Practice #1-8

reminders

Unit 10 Test Corrections due Friday 9AM

Super Saturday Makeup Wednesday 4:30-6:30

warm-up

Have out your Defeat the EOC book & HW ready to stamp

Get out your internet-capable device!!

A painter charges $35 per hour for labor plus $40 for a ladder rental when he paints a house. The customer provides the paint. The total charge to paint a customer's house was $950. How many hours did the painter spend painting this house?

F $12\frac{2}{3}$ h

G 28 h

H 23 h

J Not here

$35h + 40 = 950$

The set of ordered pairs below represents some points on the graph of function *f*.

$$\{(3, 11), (-1, 3), (5, 15), (-4, -3), (-7, -9)\}$$

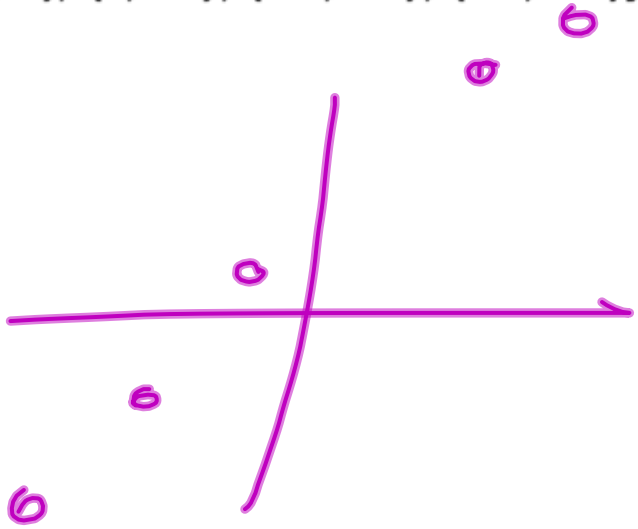
What is the parent function of *f*?

F $y = x$

G $y = 2^x$

H $y = x^2$

J $y = \sqrt{x}$



A family will travel 350 miles from their house in order to reach Dallas, TX. Which inequality can be used to find all possible values of t, the time it will take this family to reach Dallas in hours, if they travel at an average speed of at least r miles per hour?

F $t \leq 350r$

G $t > \frac{r}{350}$

H $t \leq \frac{350}{r}$

J $t > 350r^2$

$$\text{speed} = \frac{\text{miles}}{\text{hours}}$$

$$t \cdot r = \frac{350}{t} \cdot t$$

$$\frac{tr}{r} = \frac{350}{r}$$

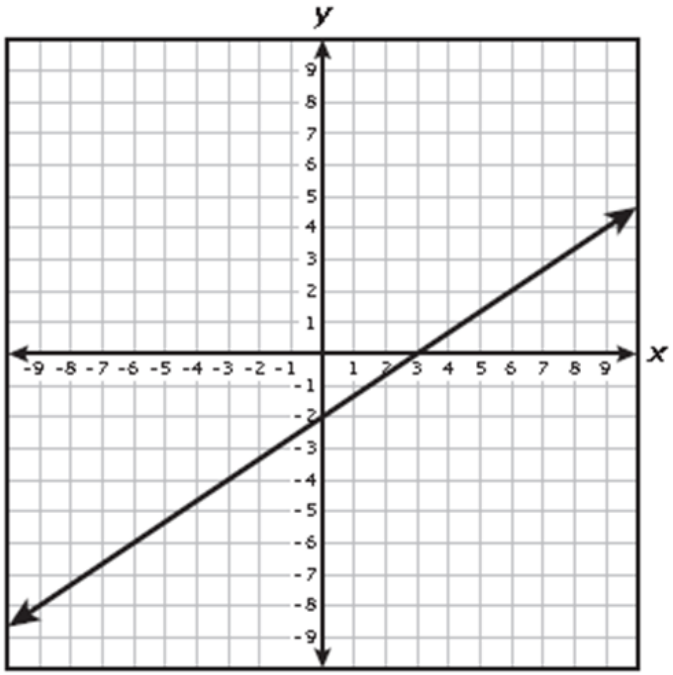
$$t = \frac{350}{r}$$

A graph is shown below.

$m = \frac{2}{3}$

$b = -2$

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



Which of the following equations are represented by the graph?

I. $y = -\frac{3}{2}x - 2$

II. $2x - 3y = 6$

III. $y = (x - 2)(x - 3)$

IV. $y - 2 = \frac{2}{3}(x - 6)$

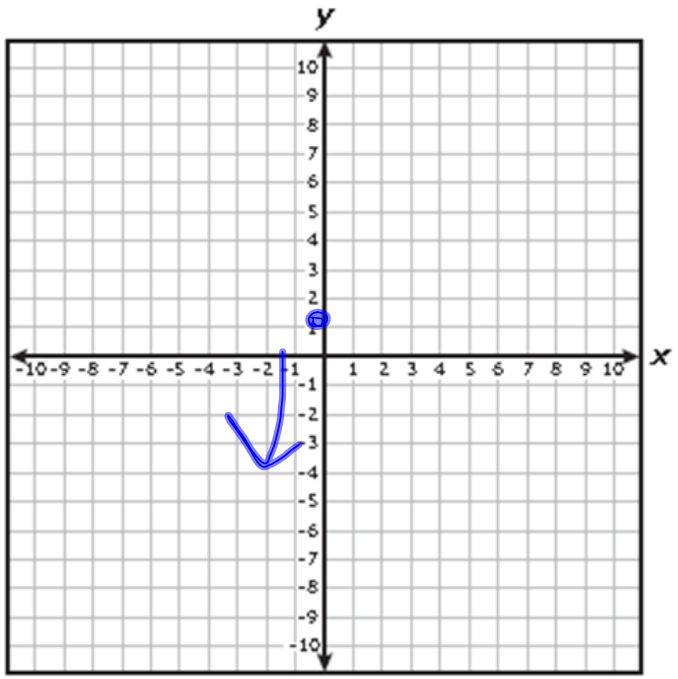
A II and IV

B I and III

C II and III

D I and IV

Which coordinate pair is in the solution set for $y < 1 - 6x$?



A (1, 0)

B (1, −1)

C (0, 1)

D (−1, 1)

$1 < 1 - 6(0)$

$1 < 1$

$1 < 1 - 6(-1)$

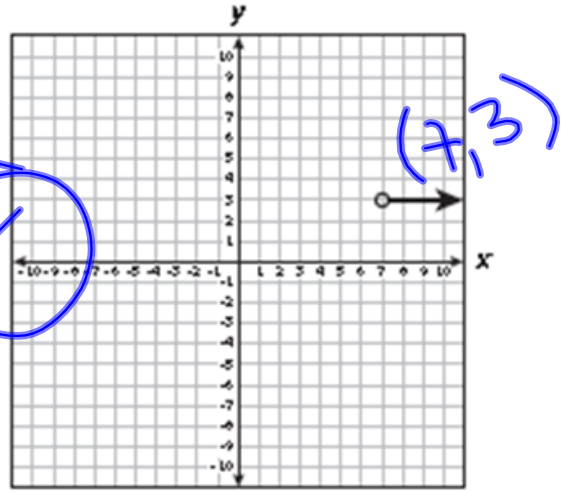
$1 < 1 + 6$

$1 < 7$

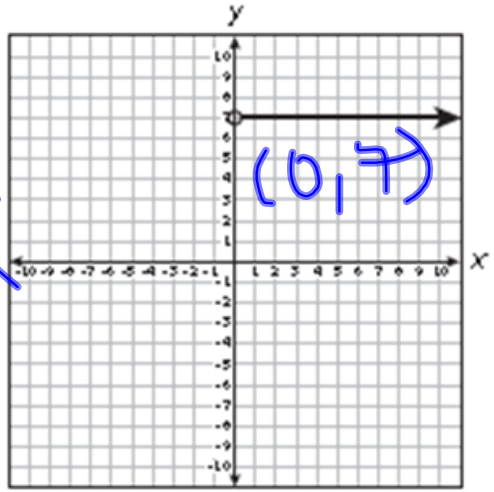
Which graph shows a function with a domain of all real numbers greater than 7?

$x > 7$

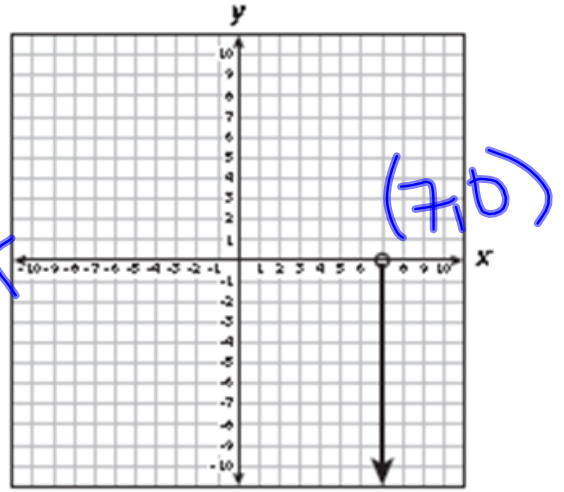
A ✓



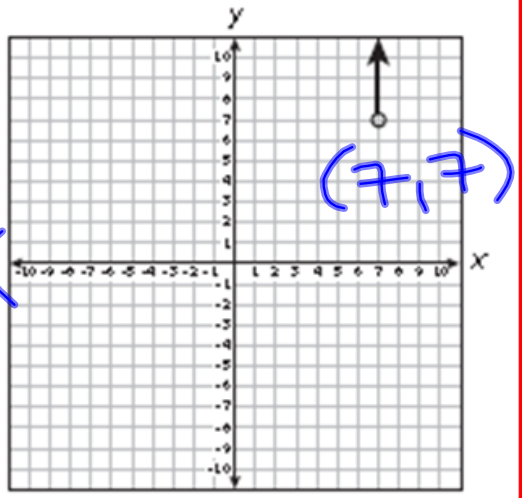
C ✗



B ✗



D ✗



practice

1. Which of the following does not represent a function?

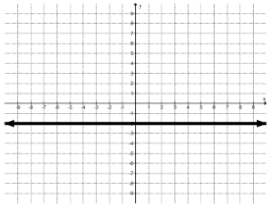
A

x	-2	0	4	10
y	-1	3	11	23

B $y = x^2 - 3$

C {(6, -1), (6, 0), (6, 3), (6, 5)}

D



2. If $f(x) = x^2 + 2x + 3$, what is the value of $f(x)$ when $x = 6$?

A 27
B 42
C 51
D 60

3. What is the value of $\frac{6x - 3y}{xy}$, when $x = 6$ and $y = -4$?

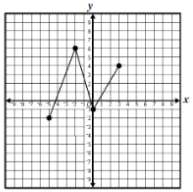
A -2
B -1
C 2
D 3

4. If (-4.5, y) is a solution to the equation $2x - 5y = 10$, what is the value of y?

$2(-4.5) - 5y = 10$
$-9 - 5y = 10$
$+9 \quad +9$
$\frac{-5y}{-5} = \frac{19}{-5}$ $y = -3.8$

5. What is the domain of the function shown?

A $-2 \le x \le 6$
B $-5 \le x \le 3$
C $-2 \le y \le 6$
D $-5 \le y \le 3$



6. The table below shows a relationship between the total cost of purchasing books through a book club and the number of books purchased.

Total Cost in Terms of Books Purchased

Books Purchased, x	0	1	2
Cost, y	\$10	\$25	\$40

What is the functions' independent variable?

A \$10
B \$15
C Cost of the club
D Number of books purchased

7. A swordfish travels through the water at a speed of 40 miles per hour. The relationship between the distance traveled, d, and the time traveled, t, is determined by the function $d = 40t$. Which of the following statements is true?

A The distance a swordfish travels is determined by the size of the swordfish.
B The amount of time a swordfish travels is determined by the size of the swordfish.
C The amount of time a swordfish travels is determined by the distance the swordfish travels.
D The distance a swordfish travels is determined by the amount of time the swordfish travels.

8. Which of the following represents the parent function $y - 2x = 7$?

A $y = 2x$
B $y = x^2 + 7$
C $y = x$
D $y = \sqrt{x}$

9. If $f(x) = 3x - \frac{1}{2}$, what is the value of $f(-3)$?

A $-9\frac{1}{2}$
B $2\frac{1}{2}$
C $8\frac{1}{2}$
D $9\frac{1}{2}$

Writing Equations of Lines

Standard Form: $Ax + By = C$

A, B, and C are whole #s

• solve for y
• plug in point

Point - Slope: $y - y_1 = m(x - x_1)$

(x_1, y_1) slope

(1, -2) m=3

y - -2 = 3(x - 1)

Slope Intercept: $y = mx + b$

slope y-intercept

Parallel - // slopes same

Perpendicular - slopes are flippin' opposites

m = 2/1 ⊥ m = -1/2

To write an equation given 2 points:

(4, -3) (-1, 2)

CALCULATOR

STAT 1:Edit

x's → L1 y's → L2

STAT → CALC

4:LinReg

y = -x + 1

ex. Write equation of the line passing through the points (4,-3) and (-1,2)

1. Which of the following is not a correct description of the graph of the equation $2x + y = -7$? y = -2x - 7

   A. The graph of the equation contains the point (−2, −3), and when the value of x increases by 1 unit, the value of y decreases by 2 units.

   B. The graph of the equation contains the points (−1, −5), (2, −11), and (4, −15).

   C. The graph of the equation is a line that passes through the point (0, −7) with a slope of −2.

   D. The graph of the equation contains the points (0, −7), (1, −9), and (3, −1).

2. Which inequality best describes the graph shown below?

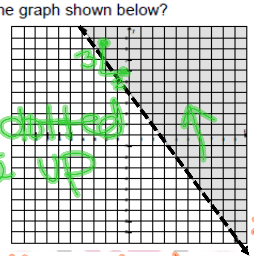
   A. $y > -\frac{2}{3}x + 5$

   B. $y < -\frac{3}{2}x + 5$

   C. $y < -\frac{2}{3}x + 5$

   D. $y > -\frac{3}{2}x + 5$

   $m = \frac{rise}{run} = \frac{-3}{2}$ dotted up



Shade UP Shade DOWN

dotted line: > <

solid line: ≥ ≤

HOY — zero slope

VUX — undefined

3. What is the equation in standard form of the line that passes through the point (1, 24) and has a slope of −0.6?

   3(1) + 5(24)

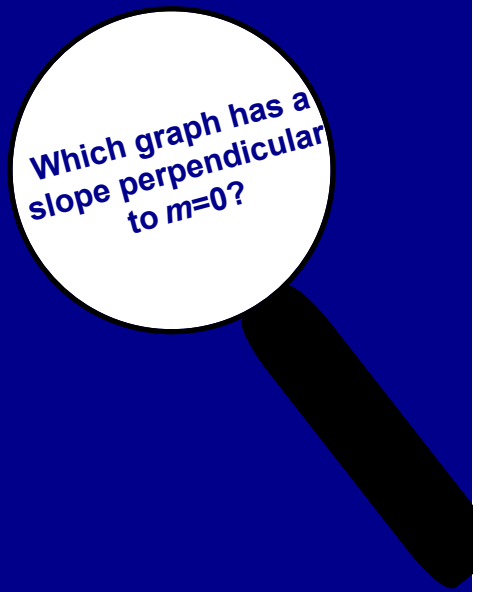
   F $3x + 5y = 125$

   G $3x + 5y = 77$

   H $3x + 5y = 123$

   J $3x + 5y = 115$

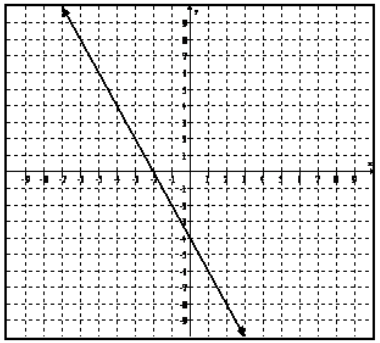

00:00 00


Which graph has a slope perpendicular to m=0?

Algebra I - Unit 11: End of Course Review - Writing Equations of Lines

Which Graph Teacher Sheet– Writing Equations of Lines

1



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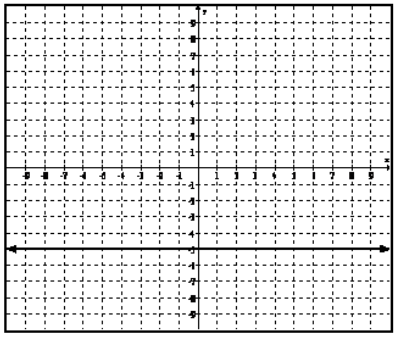

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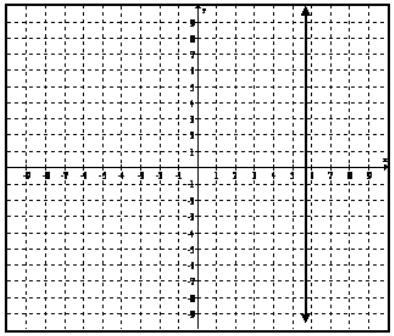

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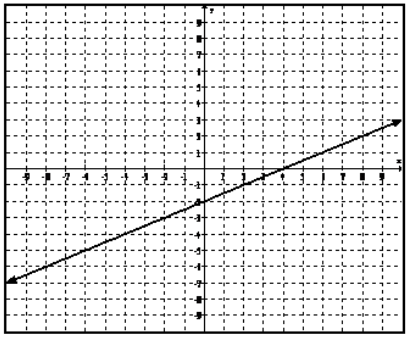


Writing equations of Lines

card sort

~~Directions~~

Match the cards into 5 sets of 4 cards. Each set will have one graph, one table, one equation, and one card with the slope and y-intercept

Practice

1. Which equation describes the line that passes through the point (4, 7) and is parallel to the line represented by the equation $-3x + y = 4$?

   A $y = -3x + 19$

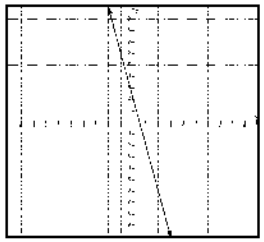
   B $y = 3x - 5$

   C $y = \frac{1}{3}x + 5\frac{2}{3}$

   D $y = -\frac{1}{3}x + 8\frac{1}{3}$

2. Write a function in slope-intercept form that represents a line that contains the point (2, 12) and has a slope of -3?

3. Which inequality best represents the graph shown below?



   A $x + 4y \geq 8$

   B $4x + y \geq 2$

   C $4x + y < 2$

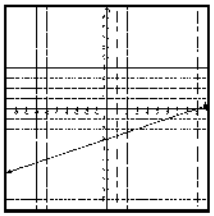
   D $x + 4y \leq 8$

4. Which function includes the data set $(-2,7),(4,4),(6,3)$? LinReg

   A $y = -\frac{1}{2}x + 6$ B $y = -2x + 3$

   C $y = \frac{1}{2}x + 8$ D $y = 2x - 4$

5. What are the intercepts of the linear function shown below?



   A (-3, 0) and (9, 0)

   B (-3, 0) and (0, 9)

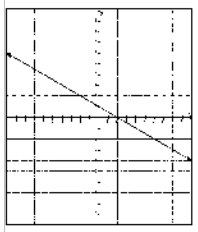
   C (0, -3) and (0, 9)

   D (0, -3) and (9, 0)

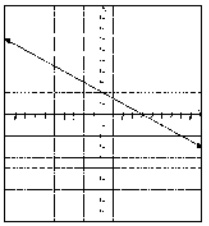
Solve for y

6. Which of the graphs below best represent the inequality $x + 2y < 4$?

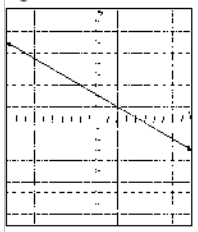
A



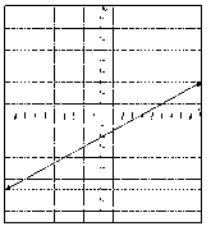
B



C



D



7. The table below shows various values for x and y. Which equation best describes the relationship between x and y? LinReg

   A $y = -3x + 5$

   B $y = -5x - 7$

   C $y = -x + 17$

   D $y = 3x + 41$

x	y
-6	23
-2	3
7	-42
11	-62

8. Which function includes the following set of ordered pairs $(1,3),(2,0),(3,-3)$? LinReg

   A $y = -3x$ C $y = -3x + 6$

   B $y = \frac{-x}{3}$ D $y = -\frac{x}{3} - 4$