Math Problem Set 2

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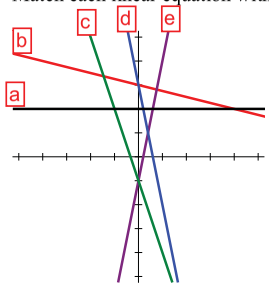
#1 Points possible: 1. Total attempts: 2

Match each linear equation with its graph

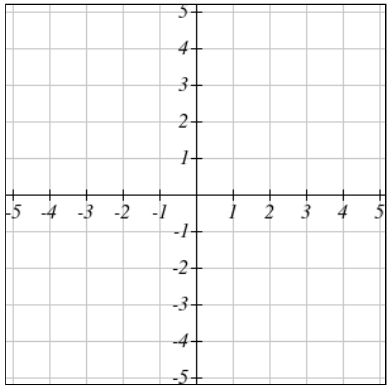


Equation

- $y = 2$
- $y = -3x - 1$
- $y = -5x + 3$
- $y = -\frac{1}{4}x + 3$
- $y = 5x - 1$

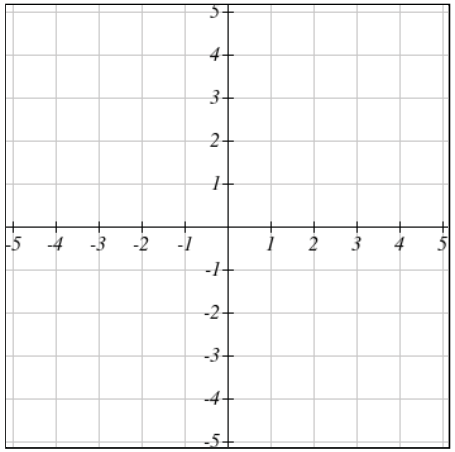
#2 Points possible: 1. Total attempts: 2

Sketch a graph of $x = -2$



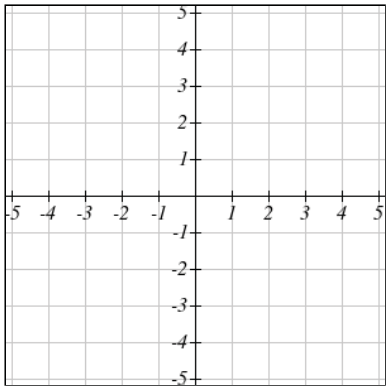
#3 Points possible: 1. Total attempts: 2

Graph the line that has an x-intercept of (3,0) and y-intercept of (0,3).



#4 Points possible: 1. Total attempts: 2

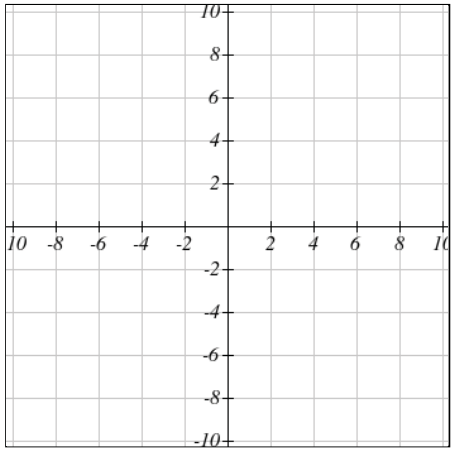
Sketch a graph of $f(x) = -2x - 2$



#5 Points possible: 1. Total attempts: 2

Two parts.

(a) Graph the line through the points (-6,0) and (6,4).

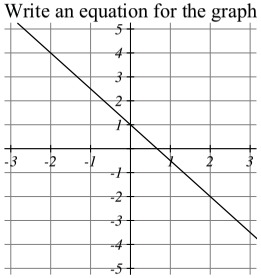


(b) Write an equation of the line in the form $y = mx + b$.

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

#6 Points possible: 1. Total attempts: 2

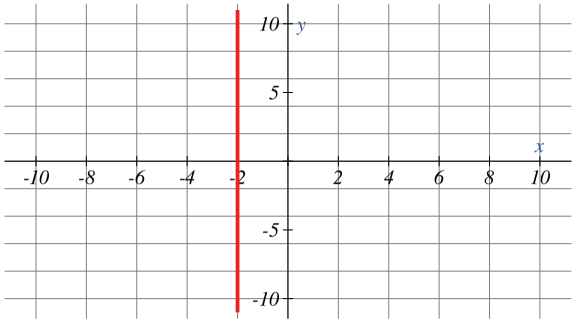
Write an equation for the graph below in terms of x



$y =$ _____

$-1.5 \cdot x + 1$

#7 Points possible: 1. Total attempts: 2



Write the equation of the line shown. Be sure to use the correct variable.

Equation: _____

$x = -2$

#8 Points possible: 1. Total attempts: 2

Given the equation $y = -3x - 3$

The x intercept is: _____

The y intercept is: _____

$(-1, 0)$

$(0, -3)$

#9 Points possible: 1. Total attempts: 2

Find the x and y intercepts of the equation: $-5x + 3y = -45$

The intercepts are:

x intercept = (_____,0)

y intercept = (0,_____)

9

-15

#10 Points possible: 1. Total attempts: 2

Find the point at which the line $f(x) = x - 1$ intersects the line $g(x) = 4x - 1$

(____,____)

0

-1

#11 Points possible: 1. Total attempts: 2

Use algebra to find the point at which the line $f(x) = \frac{9}{2}x + \frac{33}{1}$ intersects the line $k(x) = -\frac{7}{4}x - \frac{29}{12}$.

Write the values of x and y as reduced fractions or integers.

$x =$ ____
$y =$ ____
$-\frac{17}{3}$
$\frac{15}{2}$

#12 Points possible: 1. Total attempts: 2

A car rental company offers two plans for renting a car.
Plan A: 30 dollars per day and 16 cents per mile
Plan B: 50 dollars per day with free unlimited mileage
For what range of miles will plan B save you money?

To save money the mileage must be greater than _____ .

Give your answer accurate to at least one decimal place
125.0

#13 Points possible: 1. Total attempts: 2

In 2005, a school population was 2325. By 2007 the population had grown to 2495.

1) How much did the population grow between the year 2005 and 2007?

_____ students

2) How long did it take the population to grow from 2325 students to 2495 students?

_____ years

3) What is the average population growth per year?

_____ Select an answer

4) What was the population in the year 2000?

_____ students

5) Find an equation for the population, P, of the school t years after 2000.

$P =$ _____

6) Using your equation, predict the population of the school in 2012.

_____ students

170
2
85
students/year
1900
$85 \cdot t + 1900$
2920

#14 Points possible: 1. Total attempts: 2

The phone company NextFell has a monthly cellular plan where a customer pays a flat monthly fee and then a certain amount of money per minute used on the phone. If a customer uses 490 minutes, the monthly cost will be $96.5. If the customer uses 770 minutes, the monthly cost will be $138.5.

A) Find an equation in the form $y = mx + b$, where x is the number of monthly minutes used and y is the total monthly of the NextFell plan.

Answer: $y =$ _____

Do no use any commas in your answer.

B) Use your equation to find the total monthly cost if 967 minutes are used.

Answer: If 967 minutes are used, the total cost will be _____ dollars.

The cost equation is $y = 0.15x + 23$

168.05

#15 Points possible: 1. Total attempts: 2

In 1992, the moose population in a park was measured to be 3330. By 1997, the population was measured again to be 4580. If the population continues to change linearly:

Find a formula for the moose population, P, in terms of t, the years since 1990.

$P(t) =$ _____

What does your model predict the moose population to be in 2004?

_____

$250t + 2830$

6330

#16 Points possible: 1. Total attempts: 2

Suppose that the world's current oil reserves is R = 1850 billion barrels. If, on average, the total reserves is decreasing by 18 billion barrels of oil each year, answer the following:

A.) Give a linear equation for the total remaining oil reserves, R, in terms of t, the number of years since now. (Be sure to use the correct variable and Preview before you submit.)

R= _____

B.) 9 years from now, the total oil reserves will be _____ billions of barrels.

C.) If no other oil is deposited into the reserves, the world's oil reserves will be completely depleted (all used up) approximately _____ years from now.

(Round your answer to two decimal places.)

$-18t + 1850$

1688

~~102.7777777778~~ 102.78

#17 Points possible: 1. Total attempts: 2

You are choosing between two different cell phone plans. The first plan charges a rate of 23 cents per minute. The second plan charges a monthly fee of $29.95 *plus* 9 cents per minute. How many minutes would you have to use in a month in order for the second plan to be preferable?

_____

~~213.92857142857~~ 214

#18 Points possible: 1. Total attempts: 2

When hired at a new job selling jewelry, you are given two pay options:

Option A: Base salary of $14,000 a year, with a commission of 9% of your sales

Option B: Base salary of $24,000 a year, with a commission of 3% of your sales

In order for option A to produce a larger income, you would need sell at least $ _____ of jewelry each year.

166666.67

#19 Points possible: 1. Total attempts: 2

The median home value in Arkansas and Montana (adjusted for inflation) are shown below.

Year	Arkansas	Montana
1950	24800	35100
2000	72800	99500

If we assume that the house values are changing linearly,

a) In which state have home values increased at a higher rate? Select an answer

b) If these trends were to continue, what would be the median home value in Arkansas in 2010?
$ _____

c) If we assume the linear trend existed before 1950 and continues after 2000, the two states' median house values will be (or were) equal in what year? (The answer might be absurd)
The year _____
Montana
82400
1919

#20 Points possible: 1. Total attempts: 2

Find the area of a triangle bounded by the y axis, the line $f(x) = 4 - \frac{5}{6}x$, and the line perpendicular to $f(x)$ that passes through the origin.

Area = _____
$\frac{240}{61}$
