

Linear Functions REVIEW

Date _____ Period _____

Select the equation that best represents the situation.

- 1) Mr. Allen-Black has \$950 in his bank account. He has set up an automatic payment of \$80 per month to pay for his Disney annual passes. Find the best equation if x represents the number of months, and b represents the balance in his bank account.

A) $b = -80 + 950x$ B) $b = 80 + 950x$ C) $b = 905 + 80x$ D) $b = 950 - 80x$

- 2) Alykhan works at a high-end retail shop. He makes \$13 per hour, plus \$3 for each item he sells. Find the best equation if x represents the number of items he sells in an hour, and $p(x)$ represents this total pay for the hour.

A) $p(x) = 13x - 3$ B) $p(x) = 13 + 3x$ C) $p(x) = 13 - 3x$ D) $p(x) = 13x + 3$

- 3) Mr. Cozier has been separated from his mother for three months. He is finally taking a trip on Amtrak to see her. The train leaves a station travelling 60 miles per hour. It is 500 miles away from the town where his mom lives. Find the best equation if h represent the number of hours he is traveling on the train, and $d(h)$ represents the distance his is away from his mother's town.

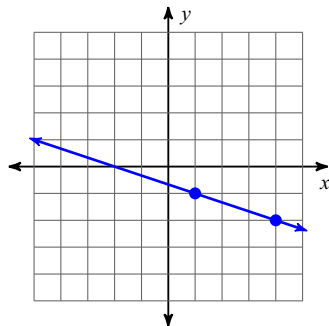
A) $d(h) = 500 + 60h$ B) $d(h) = 500 - 60h$
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- 4) There is a daily fee for renting a moving truck, plus a charge of \$0.50 per mile driven. If driven 48 miles, it costs \$64 to rent a truck. Find the best equation if x represents the number of miles driven, and f represents the total fee.

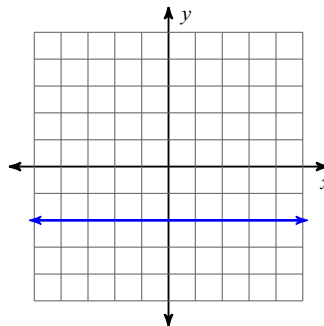
A) $f = 0.5x + 16$ B) $f = 0.5x - 40$ C) $f = 0.5x + 88$ D) $f = 0.5x + 40$

Find the slope of each line.

5)



6)



Find the slope of the line through each pair of points.

7) $(-1, 7), (-7, -16)$

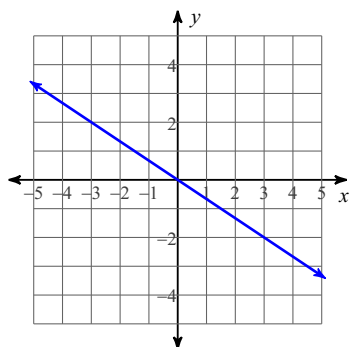
8) $(7, 12), (-3, -8)$

9) $(11, -3), (11, 14)$

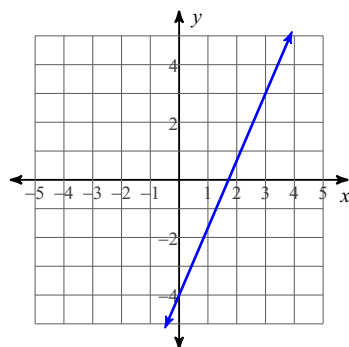
10) $(9, -7), (-3, -7)$

Write the slope-intercept form of the equation of each line.

11)

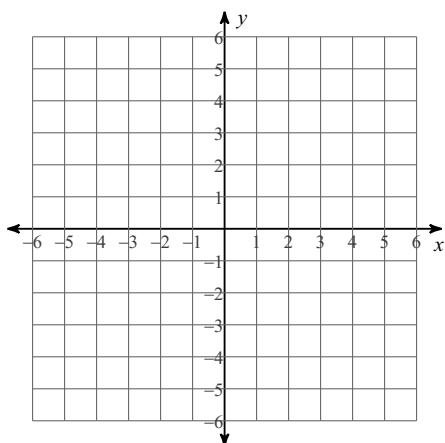


12)

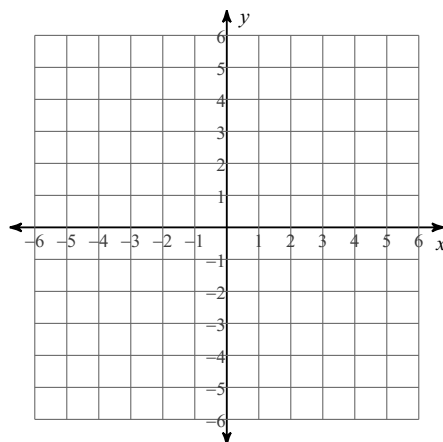


Sketch the graph of each line.

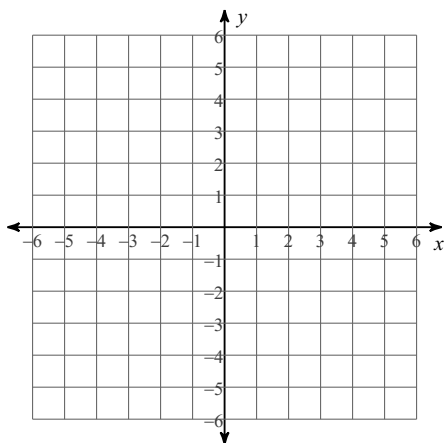
13) $y = -3x + 3$



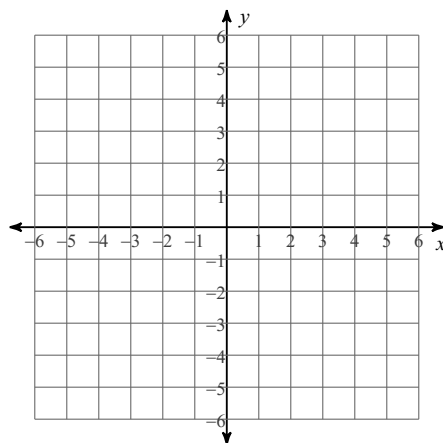
14) $y = \frac{3}{2}x$



15) $8x - 5y = -20$



16) $5x + 3y = -12$



Write the slope-intercept form of the equation of the line through the given point with the given slope.

17) through: $(2, 2)$, slope = $\frac{3}{2}$

Write the slope-intercept form of the equation of the line through the given points.

18) through: $(-3, -3)$ and $(-2, 1)$

Write the slope-intercept form of the equation of the line described.

19) through: $(-3, 3)$, parallel to $y = \frac{2}{3}x - 2$

20) through: $(-1, -3)$, perp. to $y = -\frac{1}{7}x + 4$

Test Review - Linear Regression

Name _____ Pd. _____

A pediatrician took a random sampling of 7 of her patients in order to analyze their ages and heights. The ages and heights are listed below:

Age	Height
7 yrs.	45"
15 yrs.	62"
10 yrs.	55"
2 yrs.	36"
18 yrs.	72"
13 yrs.	63"
8 yrs.	44"

1) Which variable in this situation is the independent variable?

2) Which variable is the dependent variable?

3) On the grid provided, create a title for your graph, label each axis clearly and graph each data point.

4) Draw a "line of best fit" for the data you plotted.

5) Find two lattice points on your line-of-best-fit and use the slope formula to calculate the slope of your line.

(Remember $m = \frac{y_2 - y_1}{x_2 - x_1}$)

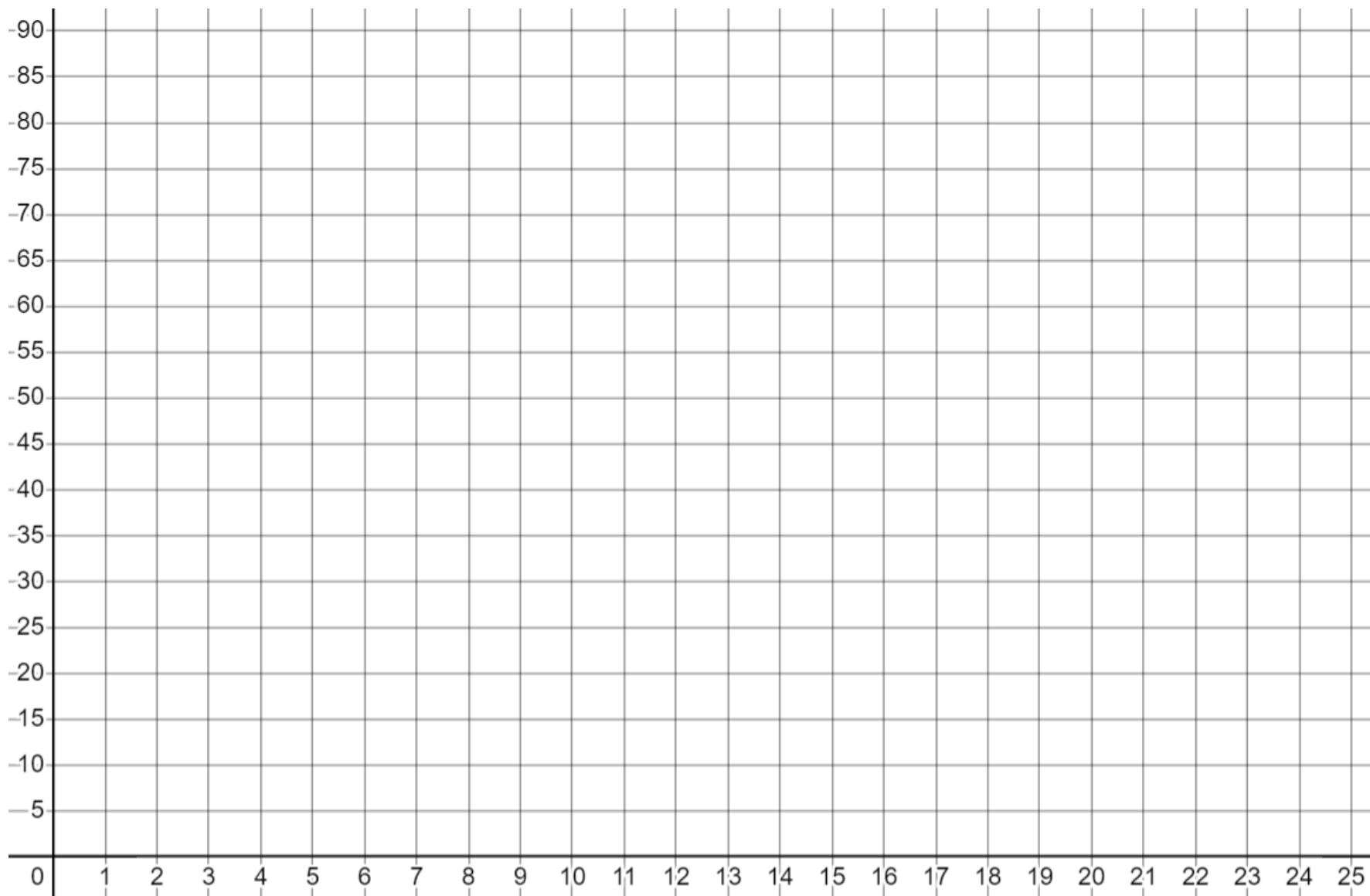
6) What is the y-intercept of your Line-of-Best-Fit?

7) Write the equation of your Line-Of-Best-Fit in Slope-Intercept form.

8) Based on your line, how tall would you expect a 5 year old child to be? Explain how you used either your graph or your equation to answer this question.

9) Based on your line, how tall would you expect a new-born baby to be? Explain how you used either your graph or your equation to answer this question.

10) Based on your line, how tall would you expect a 23 year old to be? Do you think that the linear model is a good predictor of height?



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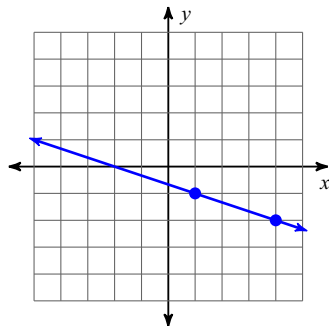
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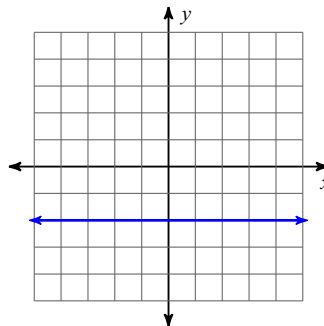
Find the slope of each line.

5)



$$-\frac{1}{3}$$

6)



$$0$$

Find the slope of the line through each pair of points.

7) $(-1, 7), (-7, -16)$

$\frac{23}{6}$

8) $(7, 12), (-3, -8)$

2

9) $(11, -3), (11, 14)$

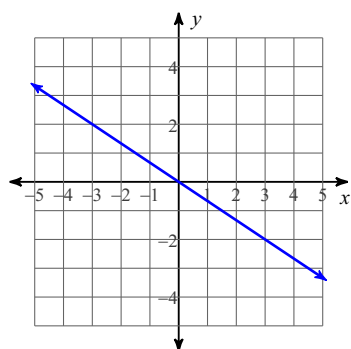
Undefined

10) $(9, -7), (-3, -7)$

0

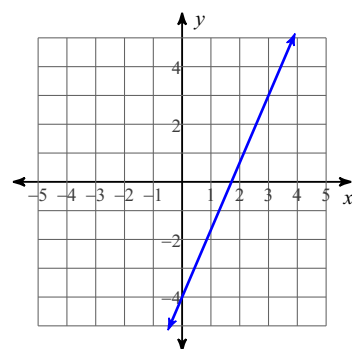
Write the slope-intercept form of the equation of each line.

11)



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

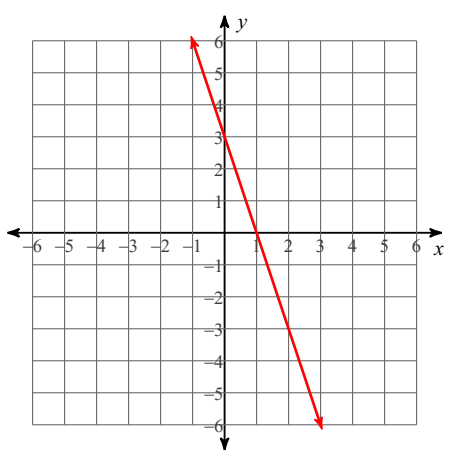
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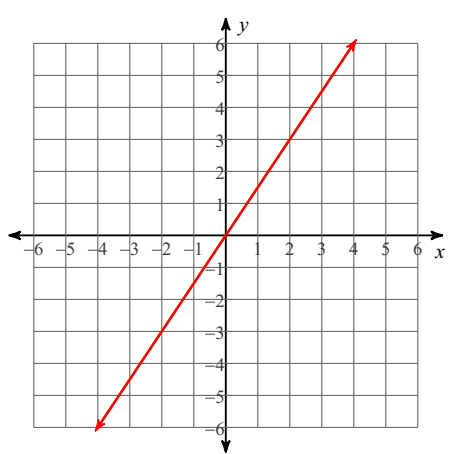
$y = \frac{7}{3}x - 4$

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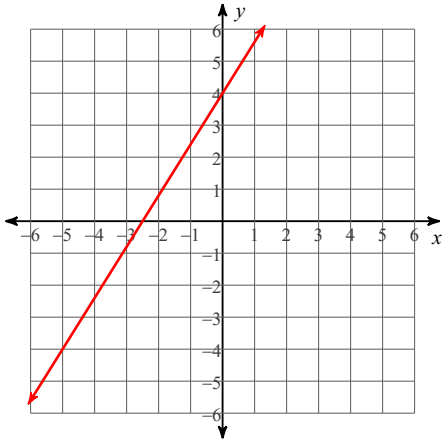
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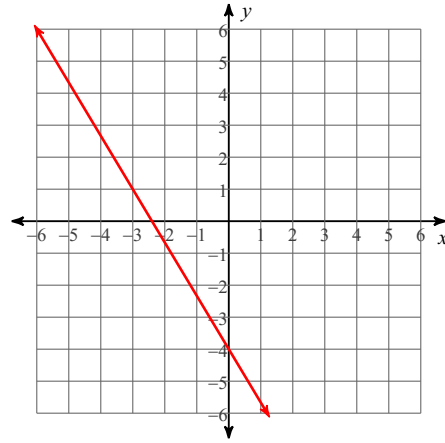
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Write the slope-intercept form of the equation of the line through the given point with the given slope.

17) through: $(2, 2)$, slope = $\frac{3}{2}$

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

Write the slope-intercept form of the equation of the line through the given points.

18) through: $(-3, -3)$ and $(-2, 1)$

$$y = 4x + 9$$

Write the slope-intercept form of the equation of the line described.

19) through: $(-3, 3)$, parallel to $y = \frac{2}{3}x - 2$

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

20) through: $(-1, -3)$, perp. to $y = -\frac{1}{7}x + 4$

$$y = 7x + 4$$