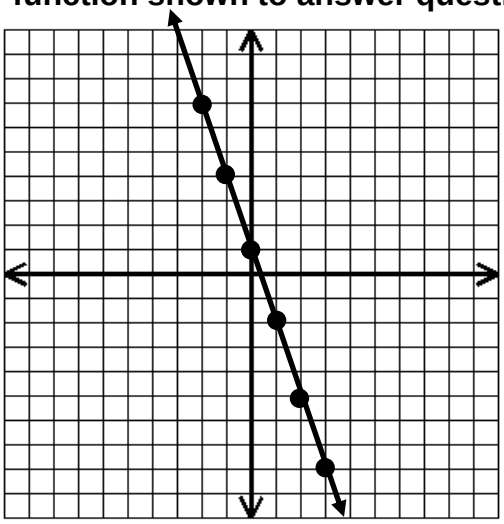
NAME_____**DATE**_____**PER.**_____

Review: Parameter Changes

Use the graph of the linear function shown to answer questions 1 – 3.

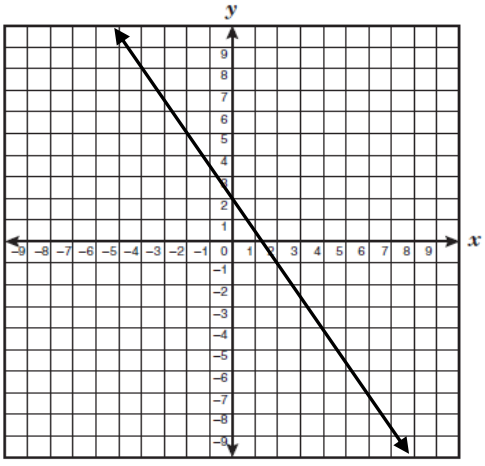


1. If the y-intercept is changed to (0, -2) and the slope is doubled, what would be the equation of the new line?

2. If the slope is halved and the y-intercept is decreased by 7, what would be the equation of the new line?

3. If the line is translated up 4 units, what would be the equation of the new line?

4. What are the slope and y-intercept of the equation of the line graphed below?



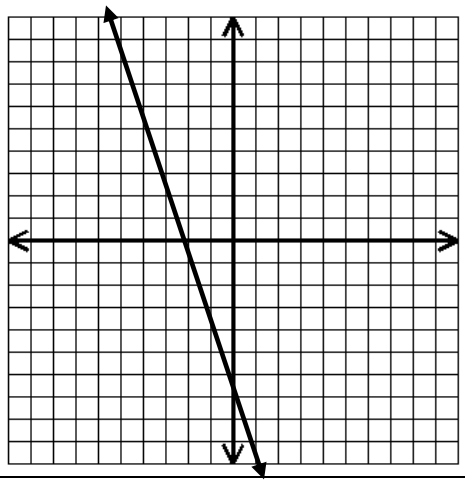
m = _____ b = _____

Equation: _____

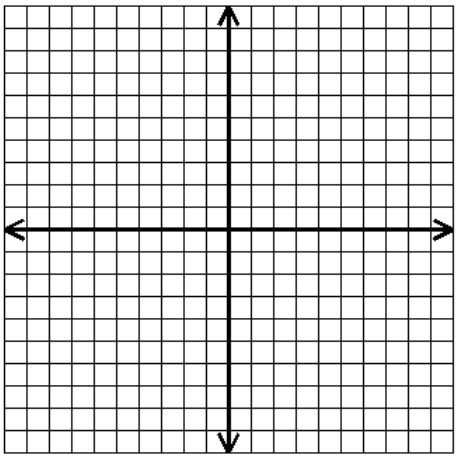
Find the new equation if you divide the slope and y-intercept by ¼.

_____

5. The graph of a line that contains the points (-3, 2) and (-1, -4) is shown…



Graph the line where the slope is doubled and the y-intercept remains constant.



6. Josh fills his swimming pool at the rate of 2000 gallons per hour. There were 3000 gallons of water in the pool when he started filling it. The total number of gallons of water in the pool after Josh fills it for *x* hours can be represented by the equation $y = 2000x + 3000$. If Josh adds a second hose, he can fill the pool twice as fast. How will this affect the equation and graph of this situation?

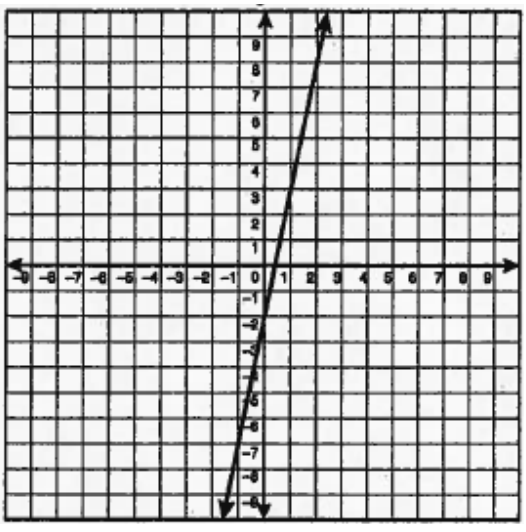
New Equation: _____

The line will be…
A. translated up
B. translated down
C. steeper
D. less steep

7. The line $y = \frac{3}{4}x - 4$ is drawn on a coordinate grid. A second line is drawn with a slope of 1. Which statement best describes the relationship between these two graphs?

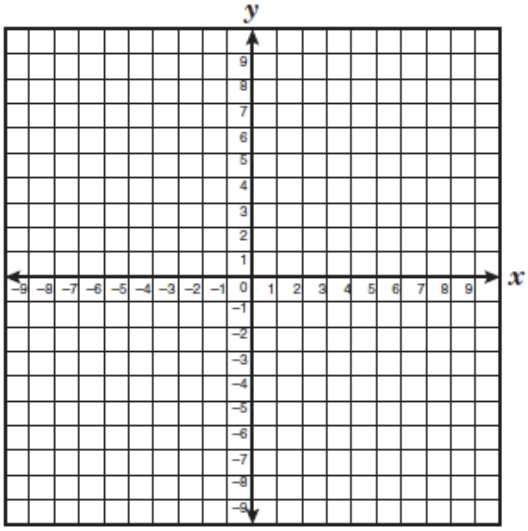
A. The second line is steeper than the first line.
B. The graphs are perpendicular lines.
C. The second line is less steep that the first line.
D. The graphs are parallel lines.

8. The equation $y = 5x - 2$ is graphed. If the value of *m* in the equation is changed to $-\frac{1}{5}$, which of the following best describes the effect on the graph?



A. The new line would be translated down.
B. The new line would be perpendicular to the original line.
C. The new line would be parallel to the original line.
D. The new line would intersect the original line on the *x*-axis.

9. If the slope of the equation $y = -\frac{2}{3}x - 6$ is changed to $\frac{2}{3}$ and the y-intercept is changed to (0, 2), which statement best describes this situation?



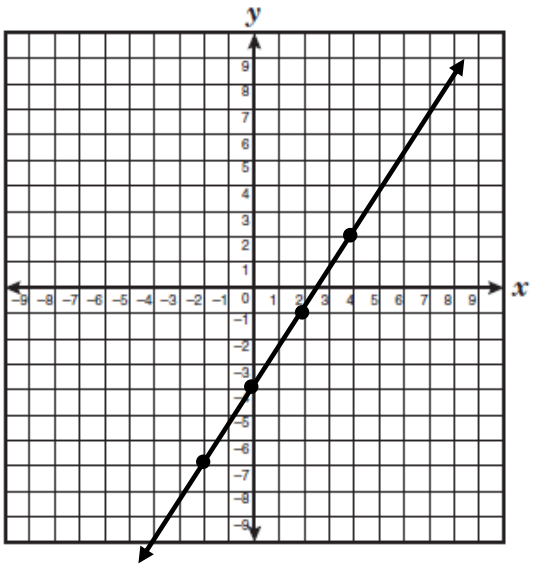
A. The new line is perpendicular to the original line.

B. The new line and the original line have the same x-intercept.

C. The new line and the original line intersect in Quadrant III.

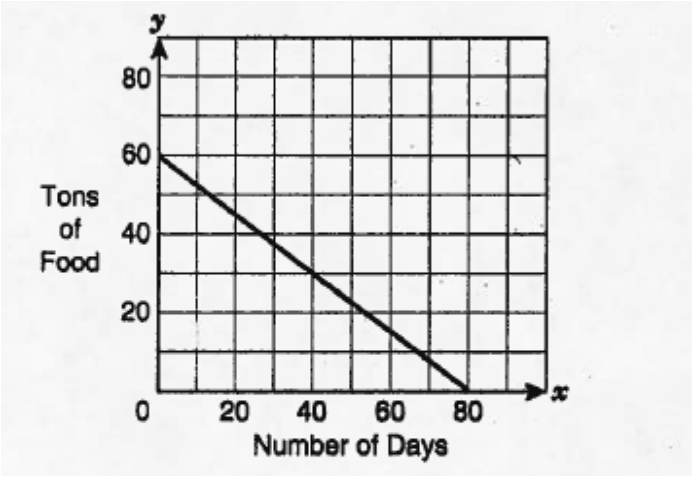
D. The new line is parallel to the original line.

10. The graph of a line is shown below.



The slope and y-intercept of the line represented above are both divided by $-\frac{1}{2}$ to create a new line. What would be the equation representing the new line?

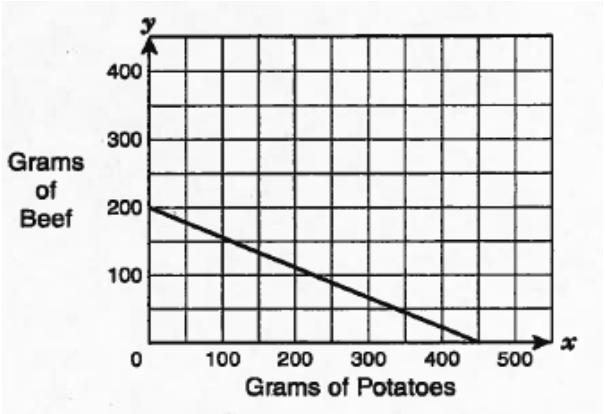
11. The graph below shows the relationship between the number of tons of elephant food remaining in the zoo's food storage bin and the number of days since the food was last purchased.



How many tons of elephant food were in the bin immediately after the last purchase of food was placed in the bin?

A. 90 tons
B. 40 tons
C. 60 tons
D. 50 tons

12. The graph below shows the number of grams of beef and the number of grams of potatoes you could eat to obtain approximately 500 calories of energy.



What is the x-intercept? _____

What does the x-intercept represent?

13. The junior class will spend $500 on decorations for a school party. The juniors will purchase x cases of balloons and y cases of streamers. Balloons cost $25 for each case, and streamers cost $125 for each case. If this information is graphed as a linear equation, what is the y-intercept of the line?

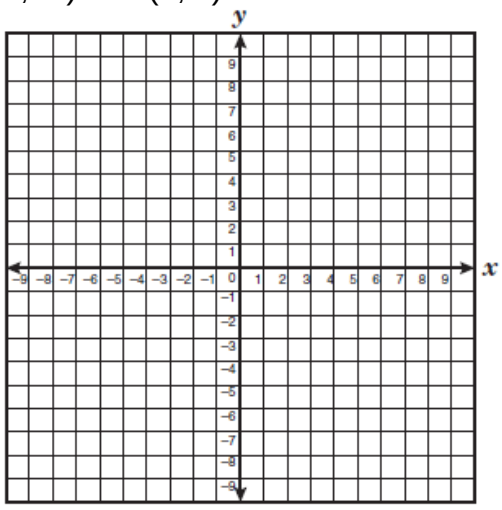
A. The y-intercept is (4, 0).

B. The y-intercept is (20, 0).

C. The y-intercept is (0, 4).

D. The y-intercept is (0, 20).

14. What is the slope of the line that contains the points (-1, -5) and (2, 1)?



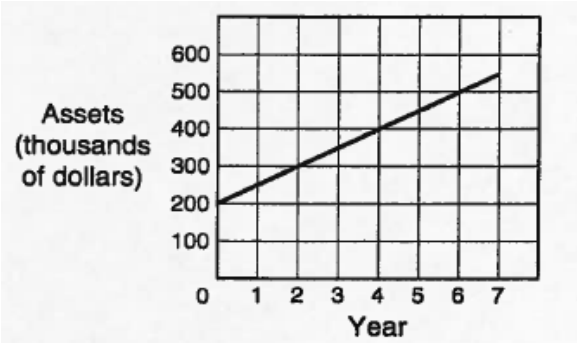
A. 2

B. $\frac{1}{2}$

C. $\frac{1}{4}$

D. -4

15. The graph projects a business's growth in financial assets over a seven-year period.



Which of the following interpretations of the graph is true?

A. The company's initial assests are $200,000. The expected growth rate is $50 per year.

B. The company's initial assests are $200. The expected growth rate is $50,000 per year.

C. The company's initial assests are $200,000. The expected growth rate is $50,000 per year.

D. The company's initial assests are $200. The expected growth rate is $50 per year.

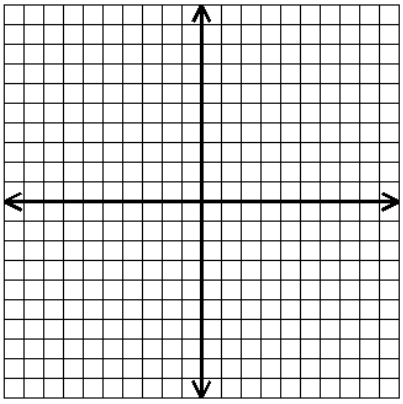
16. Find the coordinates of the x-intercept and the y-intercept of the line $2x = 9 - 3y$.

A. x-intercept (3, 0); y-intercept $(0, \frac{9}{2})$

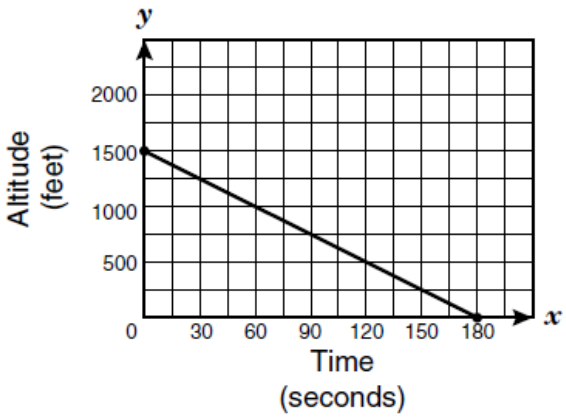
B. x-intercept (0, 3); y-intercept $(\frac{9}{2}, 0)$

C. x-intercept $(0, \frac{9}{2})$; y-intercept (3, 0)

D. x-intercept $(\frac{9}{2}, 0)$; y-intercept (0, 3)



17. The line segment on the graph shows the altitude of a landing airplane from the time its wheels are lowered to the time it touches the ground. Which of the following best describes the slope of the line segment?



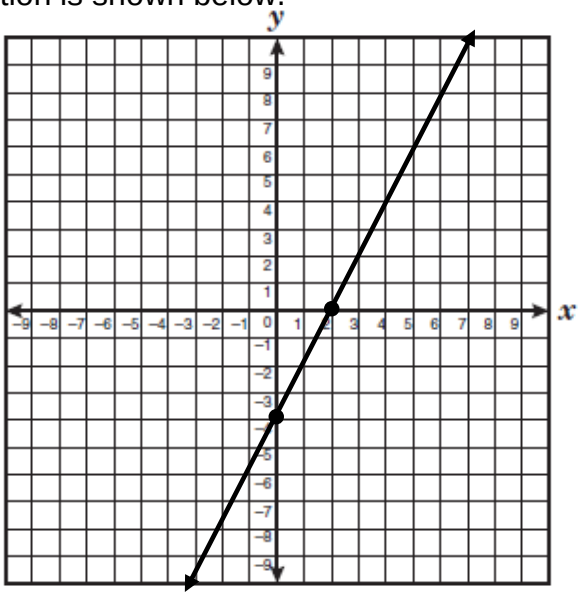
A. The plane descends about 1 foot per second.

B. The plane descends about 8 feet per second.

C. The plane descends about 1 foot per 2 seconds.

D. The plane descends about 2 feet per second.

18. The graph of a linear function is shown below.



What is the equation of the line that is translated up 5 units?

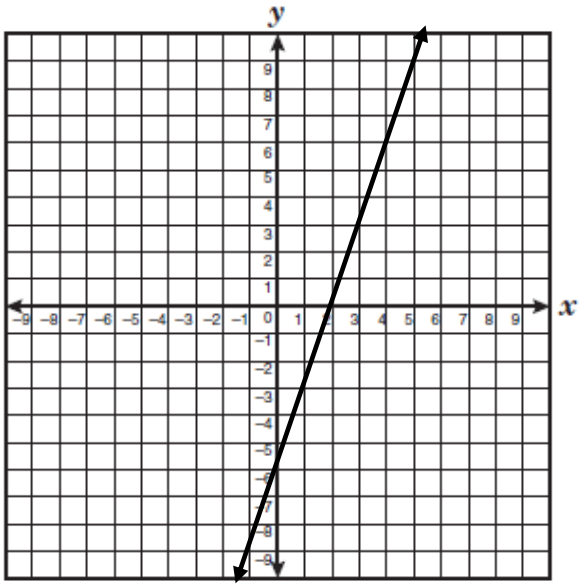
19. Two functions are given below.

$$f(x) = 2x + 5$$
$$g(x) = 3x - 5$$

How does the graph of *f* compare with the graph of *g*?

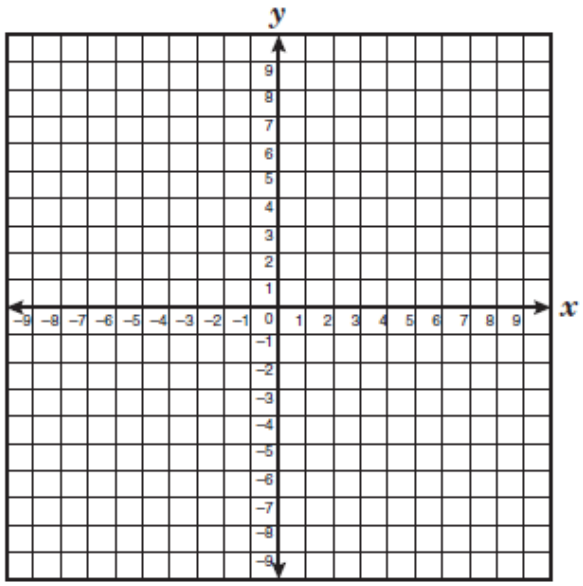
A. The graph of *f* is less steep than the graph of *g*.
B. The graph of *f* is steeper than the graph of *g*.
C. The graph of *f* is perpendicular to the graph of *g*.
D. The graph of *f* has the same y-intercept as the graph of *g*.

20. Which best describes the effect on the graph of f(x) = 3x – 6 if the y-intercept is changed to 4?



A. The new line passes through the origin.
B. The x-intercept decreases.
C. The slope decreases.
D. The y-intercept decreases.

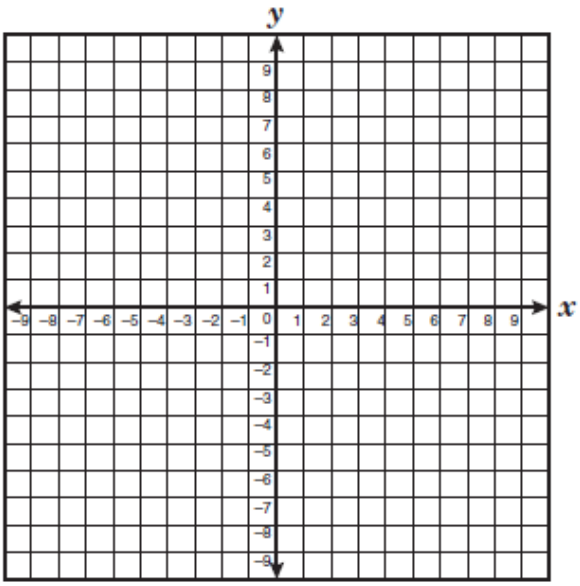
21. Find the x- and y-intercepts of $6x - 8y = -24$.



x-intercept: _____; y-intercept: _____

22. The table below shows ordered pairs of a linear function.

x	y
-9	4
-6	2
3	-4
6	-6



What are the x- and y-intercepts of this linear function?

23. What is the y-intercept of the function described by the data below? What is y when x is 16?

x	-8	-4	4	12
y	-12	-9	-3	3

24. What is the rate of change of $x = 5$?

25. What function represents the line that contains the point (-7, 9) and has a slope of -3?

26. What is the equation of the line that passes through the point (8, -8) and has a y-intercept of (0, -2)?

27. The distance, *y*, a spring stretches varies directly as the amount of weight, *x*, hanging on it. If the spring stretches 21 inches when a weight of 60 lbs is hanging on it, which of the following represents the equation of direct variation?

A. $y = \frac{6}{21}x$

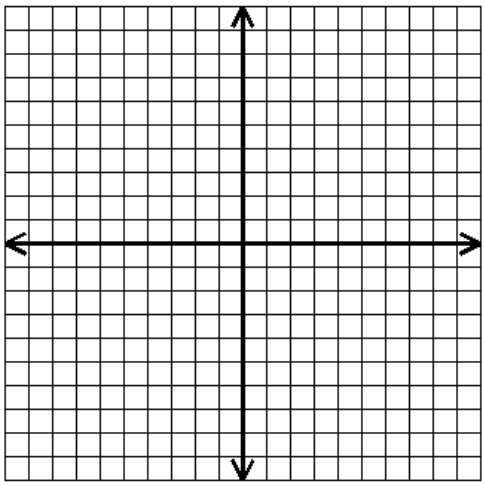
C. $y = \frac{21}{6}x$

B. $y = \frac{7}{20}x$

D. $y = \frac{20}{7}x$

28. Write the equation that describes the line that passes through the point (-6, 2) and is parallel to the line represented by the equation 2x – y = 4.

29. Graph the line that has a slope of $-\frac{4}{3}$ and contains the point (-5, 2).



30. Graph the line -2x – y = -6.