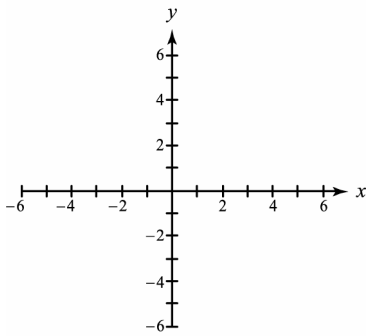
Chapter 2, Test Form A **Name:**

1. Evaluate $f(-2)$ if $f(x) = 4 - 3x^2$. 1. _____

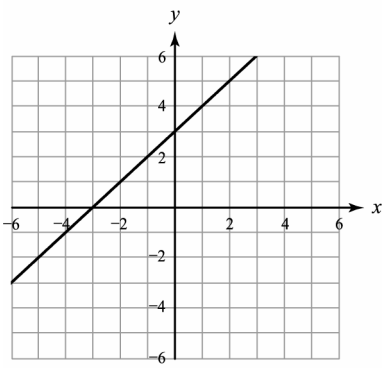
2. Write a symbolic representation (formula) for a function S that calculates the number of seconds in x minutes. Evaluate $S(4)$ and interpret your result. 2. _____

_____

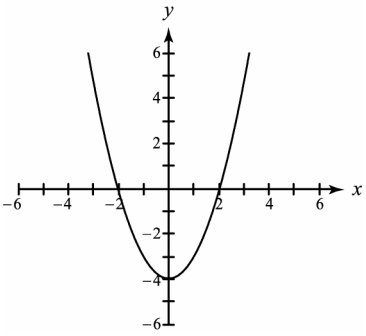
3. Sketch a graph of $f(x) = x^2 - 2$. 3.



4. Use the graph of f to evaluate $f(-1)$. 4. _____

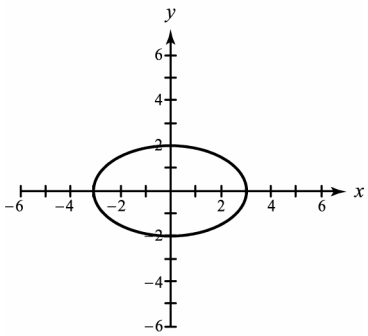


5. Determine the domain and range of f. 5. _____



6. A function f is represented verbally by "Square the input x and then add 3." Give a symbolic representation of f. 6. _____

7. Determine whether the graph represents a function. 7. _____



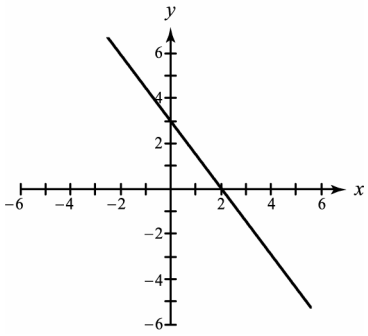
8. Find the domain of $f(x)=\frac{3}{4}x+7$. 8. _____

9. Find the slope and y-intercept of the graph of $y=3x-\frac{5}{2}$. 9. _____

_____

10. Find the slope of the line passing through $\left(\frac{1}{2},-2\right)$ and $(0,-3)$. 10. _____

11. Determine the slope of the line shown in the graph. 11. _____



12. Write the slope-intercept form of a line with x-intercept -2 and y-intercept $\frac{3}{2}$. 12. _____

13. Write the slope-intercept form of the line passing through $(1,3)$ and $\left(\frac{1}{2},1\right)$. 13. _____

14. Let f be a linear function. Find the slope of the graph of f. 14. _____

x	-4	-2	-1	0	1
$f(x)$	-6	0	3	6	9

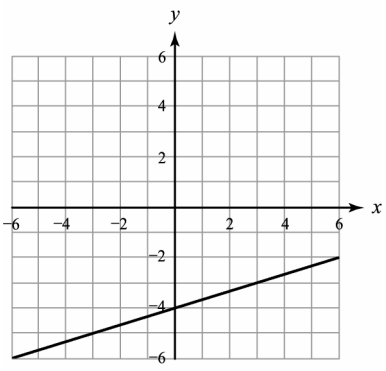
15. Let f be a linear function. Find the x- and y-intercepts of the graph of f. 15. _____

x	-2	0	1	2	3
$f(x)$	8	4	2	0	-2

_____

16. Give the slope-intercept form of a line parallel to $y = 5 - 4x$, passing through $\left(\frac{1}{2},1\right)$. 16. _____

17. Find the slope-intercept form for the line shown in the graph. 17. _____



18. Use the graph in #17 to find the equation of a line that passes through the origin and is perpendicular to the given line. 18. _____

19. Find an equation of the vertical line passing through the point $\left(\frac{1}{2}, -\frac{3}{4}\right)$. 19. _____

20. Find an equation of the horizontal line passing through the point $\left(-\frac{2}{3}, 1\right)$. 20. _____

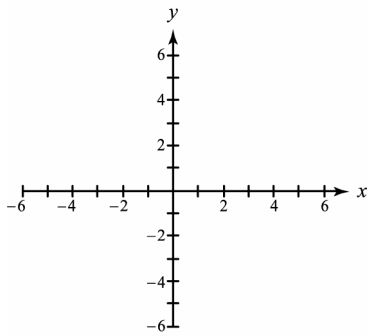
Chapter 2, Test Form B **Name:**

1. Evaluate $f(-2)$ if $f(x) = -3x + 1$. 1. _____

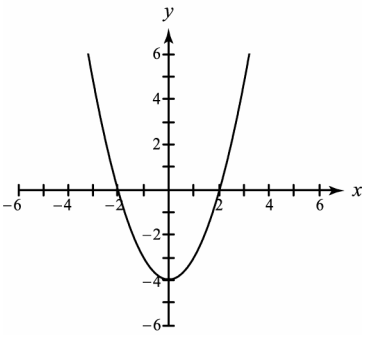
2. Write a symbolic representation (formula) for a function C that calculates the cost of x gallons of gasoline at \$2.50 per gallon. Evaluate $C(10)$ and interpret your result. 2. _____

_____

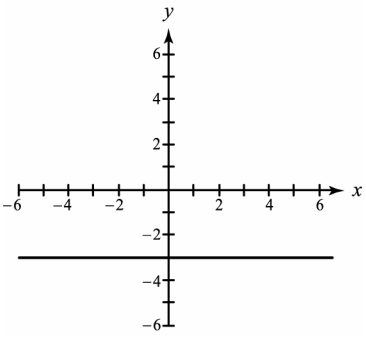
3. Sketch a graph of $f(x) = x + 3$. 3.



4. Use the graph of f to evaluate $f(2)$. 4. _____

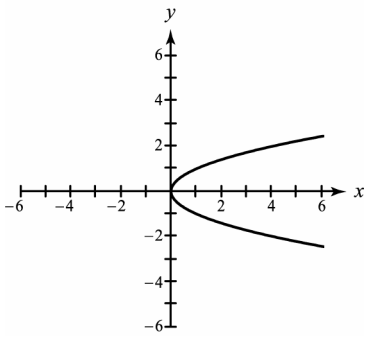


5. Determine the domain and range of f. 5. _____



6. A function f is represented verbally by "Cube the input x and then subtract 4." Give a symbolic representation of f. 6. _____

7. Determine whether the graph represents a function. 7. _____



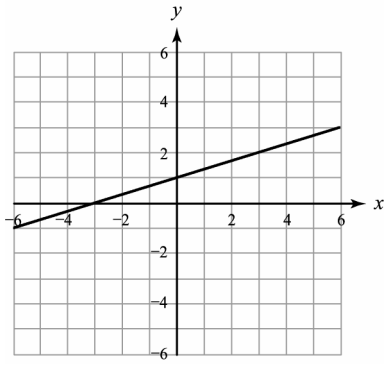
8. Find the domain of $f(x)=\sqrt{x-5}$. 8. _____

9. Find the slope and y-intercept of the graph of $y=2x-3$. 9. _____

_____

10. Find the slope of the line passing through $(1,3)$ and $\left(\frac{1}{2},1\right)$. 10. _____

11. Determine the slope of the line shown in the graph. 11. _____



12. Write the slope-intercept form of a line with x-intercept -1 and y-intercept $\frac{5}{3}$. 12. _____

13. Write the slope-intercept form of the line passing through the points $\left(\frac{3}{2}, 2\right)$ and $\left(1, \frac{1}{2}\right)$. 13. _____

14. Let f be a linear function. Find the slope of the graph of f. 14. _____

x	-2	0	2	3	4
$f(x)$	6	4	2	1	0

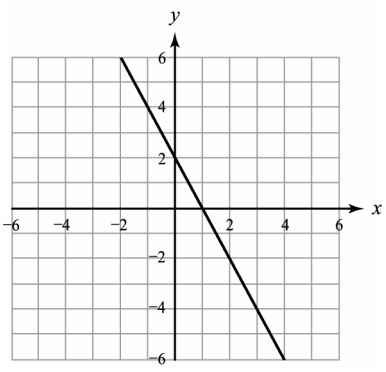
15. Let f be a linear function. Find the x- and y-intercepts of the graph of f. 15. _____

x	-2	-1	0	1	2
$f(x)$	9	6	3	0	-3

_____

16. Give the slope-intercept form of a line perpendicular to $y = -\frac{3}{5}x - 2$, passing through $(6, -2)$. 16. _____

17. Find the slope-intercept form for the line shown in the graph. 17. _____



18. Use the graph in #17 to find the equation of a line that passes through the origin and is perpendicular to the given line. 18. _____

19. Find an equation of the vertical line passing through the point $\left(-\frac{2}{3},1\right)$. 19. _____

20. Find an equation of the horizontal line passing through the point $\left(\frac{3}{2},-\frac{1}{2}\right)$. 20. _____

Chapter 2, Test Form C **Name:**

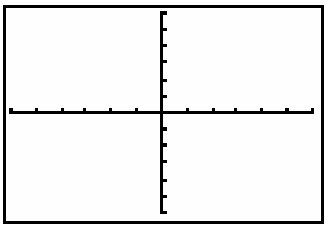
1. For the years 1890 to 1960, the median age for a man's first marriage can be modeled by $f(x) = -0.0492x + 119.1$, where x is the year. Find the median age in 1930. Round answer to the nearest year.

1. _____

2. The median price of a single-family home during the years 1990 to 2000 can be approximated by $P(x) = 5421x + 89{,}000$, where $x = 0$ corresponds to the year 1990 and $x = 10$ corresponds to the year 2000. Find the median price of a single-family home in 1998.

2. _____

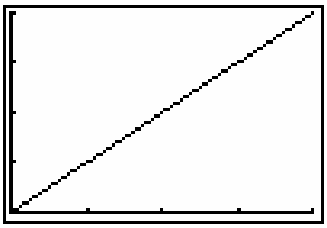
3. Use your graphing calculator to graph $f(x) = -3x + 5$.

3. 

$[-6, 6, 1]$ by $[-6, 6, 1]$

4. Susan begins driving along a country road at a rate of 40 mph. The graph illustrates the distance from her place of origin after *t* hours. How far has Susan traveled after 3 hours?

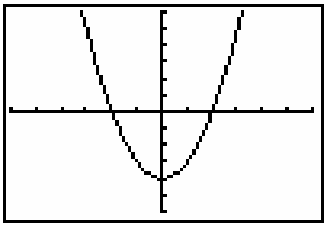
4. _____



$[0, 4, 1]$ by $[0, 160, 40]$

5. Determine the domain and range of f.

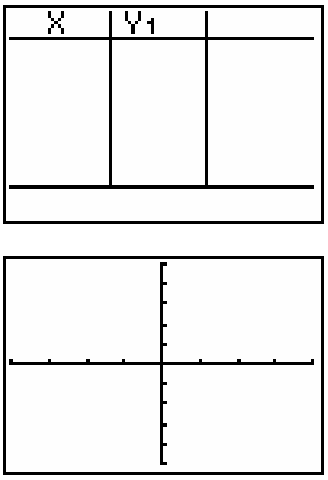
5. _____



$[-6, 6, 1]$ by $[-6, 6, 1]$

6. A function f is represented verbally by "Square the input x and then subtract 4." Give symbolic, numerical and graphical representations of f. Let $x = -3, -2, -1, ..., 3$ in the numerical representation (table) and let $-4 \le x \le 4$ for the graph.

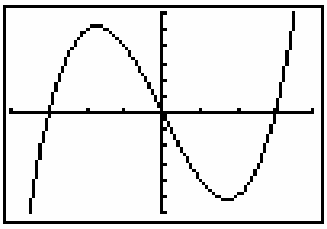
6. _____



$[-4, 4, 1]$ by $[-5, 5, 1]$

7. Determine whether the graph represents a function.

7. _____



$[-4, 4, 1]$ by $[-6, 6, 1]$

8. Find the domain of $f(x) = |x - 2.5|$.

8. _____

9. The monthly cost of operating a car can be modeled by the linear function $C(x) = 0.39x + 395$, where x represents the number of miles driven.
   (a) Find the slope of the graph of the function. What does the slope represent?
   (b) Find the *y*-intercept of the graph of the function. What does the *y*-intercept represent?

9. (a)_____

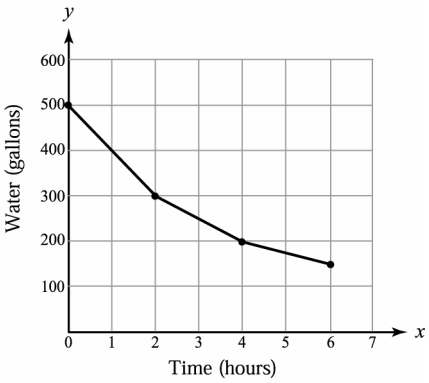
(b)_____

10. In 1994, tuition and fees at a public four-year college were $2125. In 1997, tuition and fees increased to $2689. What was the average yearly increase in fees from 1994 to 1997?

10. _____

11. The graph represents the amount of water (in gallons) remaining in a tank after t hours. At what rate was water being drained from the tank when $2 \le t \le 4$?

11. _____



12. Write the slope-intercept form of a line with x-intercept 1.29 and y-intercept –2.58.

12. _____

13. On Labor Day 2000, there were 24.8 travelers (in millions). On Labor Day 2004, there were 29.2 travelers (in millions). Let x represent the number of years since 2000. Write the slope-intercept equation of the line that passes through $(0, 24.8)$ and $(4, 29.2)$.

13. _____

14. The following table shows equivalent temperatures in degrees Celsius and degrees Fahrenheit. This data can be modeled by a linear function. Use your graphing calculator to find the slope of the graph of that function.

14. _____

C	-40°	0°	15°	35°	100°
F	-40°	32°	59°	95°	212°

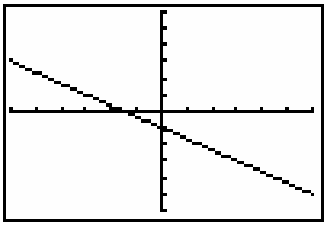
15. (a) Find the y-intercept of the graph of the linear function modeled in #14.
(b) What does the y-intercept represent?

15. (a)_____
(b)_____

16. Give the slope-intercept form of a line parallel to $y = 1.28x - 7.18$, passing through $(2, 3.17)$.

16. _____

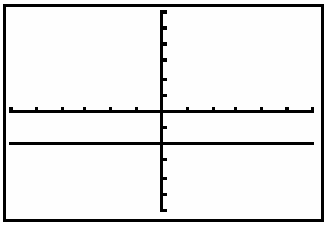
17. Find the slope-intercept form for the line shown in the graph. 17. _____



$[-6, 6, 1]$ by $[-6, 6, 1]$

18. Use the graph in #17 to find the equation of a line that passes through the origin and is parallel to the given line. 18. _____

19. Find an equation of the horizontal line in the graph. 19. _____



$[-6, 6, 1]$ by $[-6, 6, 1]$

20. From 1980 to 1997, the number of U.S. marriages (in millions) could be modeled by $f(x) = 2.4$, where x represents the years since 1980. Estimate the number of marriages in 1986. 20. _____

Chapter 2, Test Form D **Name:**

1. Evaluate $f(-3)$ if $f(x) = -x^2 + 2$. 1. _____

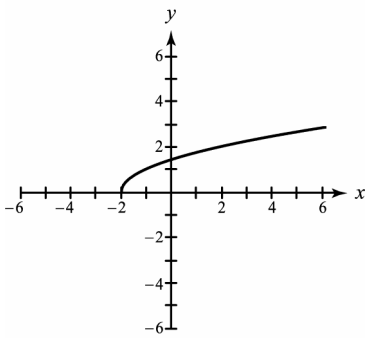
   (a) 11 (b) -7 (c) -11 (d) -1

2. Evaluate $f(2)$ if $f(x) = -5x + 6$. 2. _____

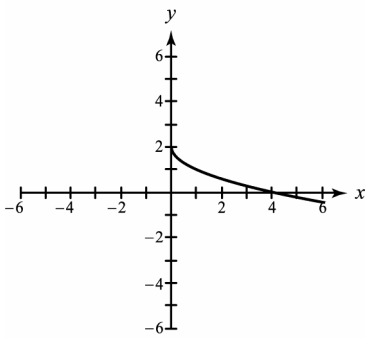
   (a) -4 (b) -16 (c) 16 (d) 4

3. Sketch a graph of $f(x) = \sqrt{x} - 2$. 3. _____

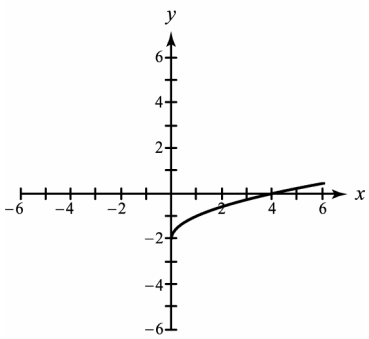
(a)



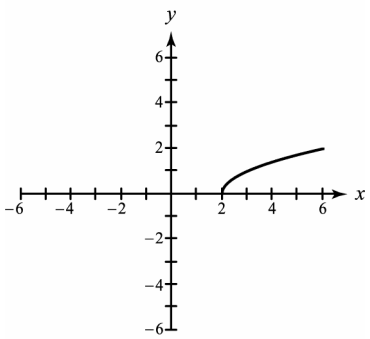
(b)



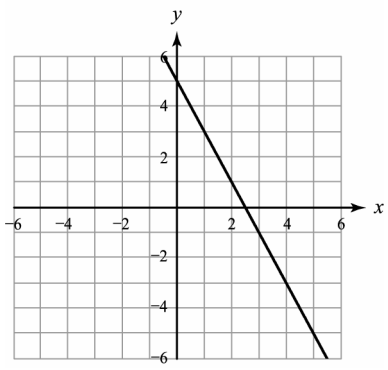
(c)



(d)

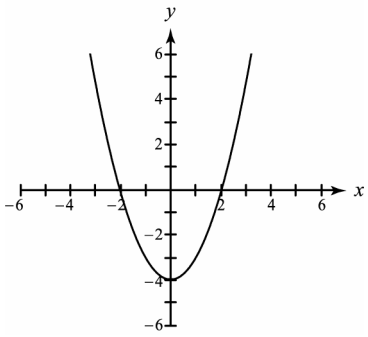


4. Use the graph of f to evaluate $f(1)$. 4. _____



(a) 2 (b) 7 (c) 1 (d) 3

5. Determine the range of f. 5. _____



(a) $-4 \le y \le 2$ (b) $-2 \le y \le 2$ (c) $y \ge -4$ (d) all real numbers

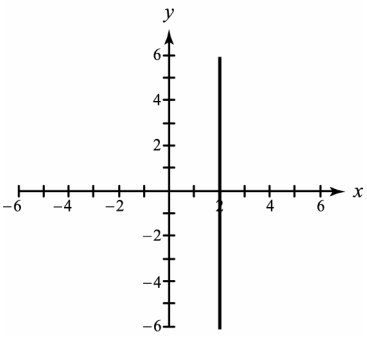
6. A function f is represented verbally by "Cube the input x and then add 4." 6. _____
Give a symbolic representation of f.

(a) $f(x) = \sqrt[3]{x+4}$ (b) $f(x) = x^3 + 4$

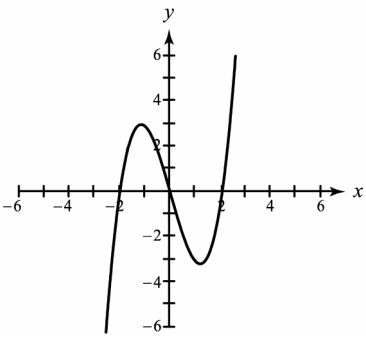
(c) $f(x) = x^3 + 64$ (d) $f(x) = (x+4)^3$

7. Determine which graph represents a function. 7. _____

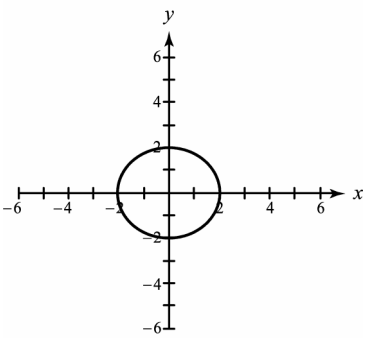
(a)



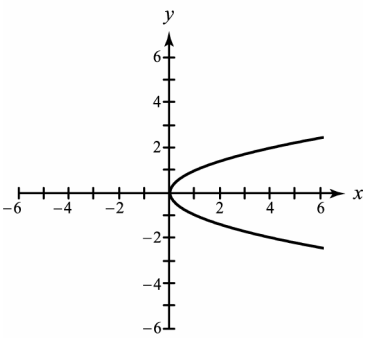
(b)



(c)



(d)



8. Find the domain of $f(x) = -\dfrac{2x}{x+4}$. 8. _____

(a) $x \neq -4$ (b) $x \leq 4$ (c) $x \neq 0$ (d) $x \geq 0$

9. Find the slope and y-intercept of the graph of the linear equation $y = 3x - \frac{5}{2}$. 9

(a) $m = 3; \left(\frac{5}{6}, 0\right)$ (b) $m = -\frac{1}{3}; \left(-\frac{5}{2}, 0\right)$

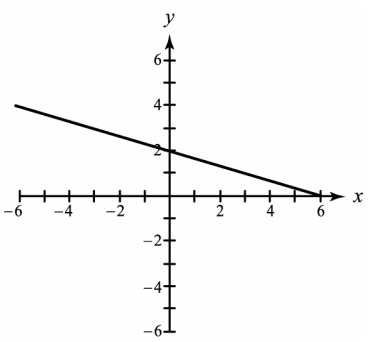
(c) $m = -\frac{1}{3}; \left(0, \frac{5}{6}\right)$ (d) $m = 3; \left(0, -\frac{5}{2}\right)$

10. Find the slope of the line passing through $\left(\frac{3}{2}, 2\right)$ and $\left(1, \frac{1}{2}\right)$. 10. _____

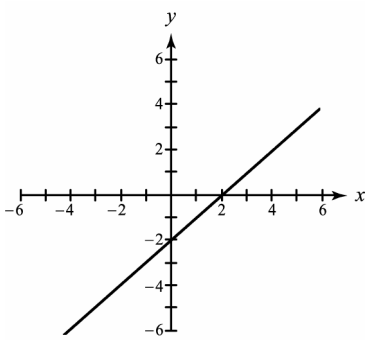
(a) 1 (b) 3 (c) $\frac{1}{3}$ (d) -1

11. Determine which line has a slope of $\frac{1}{3}$. 11. _____

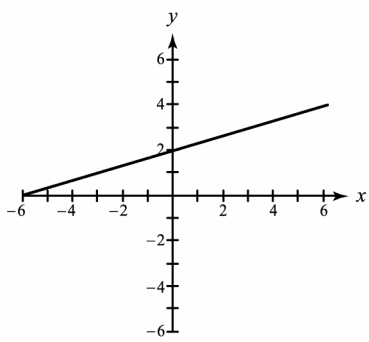
(a)



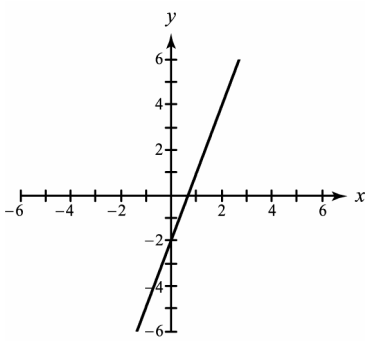
(b)



(c)



(d)



12. Write the slope-intercept form of the line with x-intercept 3 and y-intercept $\frac{3}{4}$. 12. _____

(a) $y = -\frac{1}{4}x + 3$ (b) $y = 4x - 12$ (c) $y = -\frac{1}{4}x + \frac{3}{4}$ (d) $y = 4x + 3$

13. Find the slope-intercept form of the line passing through $\left(\frac{1}{2}, -2\right)$ and $(0, -3)$. 13. _____

(a) $y = \frac{1}{2}x + \frac{5}{4}$ (b) $y = \frac{1}{2}x - 3$ (c) $y = 2x - 3$ (d) $y = 2x + 1$

14. Let f be a linear function. Find the slope of the graph of f. 14. _____

x	−2	0	1	2	4
y	8	4	2	0	−4

(a) −2 (b) 4 (c) −4 (d) 2

15. Let f be a linear function. Find the x- and y-intercepts of the graph of f. 15. _____

x	-4	-2	-1	0	1
y	-6	0	3	6	9

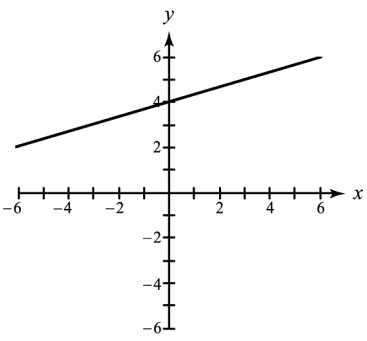
(a) $x\text{-int}:(0,6)$ $y\text{-int}:(-2,0)$ (b) $x\text{-int}:(0,-2)$ $y\text{-int}:(6,0)$ (c) $x\text{-int}:(6,0)$ $y\text{-int}:(0,-2)$ (d) $x\text{-int}:(-2,0)$ $y\text{-int}:(0,6)$

16. Give the slope-intercept form of a line perpendicular to $y=\frac{2}{3}x+7$, passing through $(4,-3)$. 16. _____

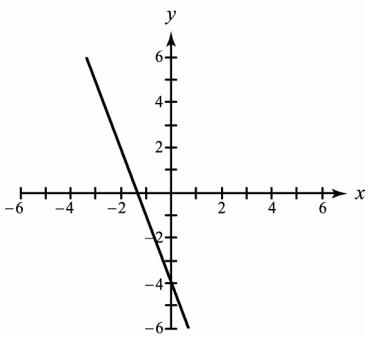
(a) $y=-\frac{3}{2}x+3$ (b) $y=\frac{2}{3}x-\frac{17}{3}$ (c) $y=\frac{2}{3}x-7$ (d) $y=-\frac{3}{2}x-3$

17. Find the graph of the linear equation $y=-3x+4$. 17. _____

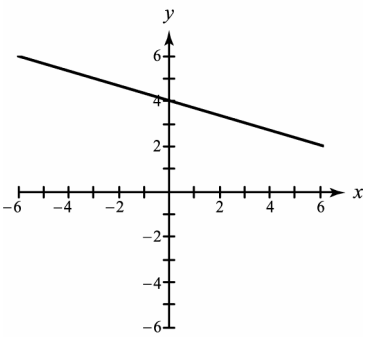
(a)



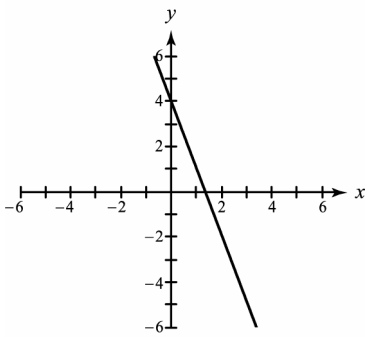
(b)



(c)



(d)



18. Find the equation of a line that passes through the origin and is perpendicular to the line given in #17. 18. _____

(a) $y=-3x$ (b) $y=\frac{1}{3}x$ (c) $x=-3y+4$ (d) $y=\frac{1}{3}x+4$

19. Find an equation of the vertical line passing through the point $\left(\frac{3}{2}, -\frac{1}{2}\right)$. 19. _____

(a) $\frac{3}{2}x - \frac{1}{2}y = 0$ (b) $x = \frac{3}{2}$ (c) $y = -\frac{1}{2}$ (d) $y = \frac{3}{2}x - \frac{1}{2}$

20. Find an equation of the horizontal line passing through the point $\left(\frac{1}{2}, -\frac{3}{4}\right)$. 20. _____

(a) $y = -\frac{3}{4}$ (b) $y = \frac{1}{2}x - \frac{3}{4}$ (c) $x = \frac{1}{2}$ (d) $\frac{1}{2}x - \frac{3}{4}y = 0$