Test Bank for Intermediate Algebra with Applications and Visualization 3rd Edition Rockswold Krieger 0321500032 9780321500038

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Test Bank:

Solution Manual:

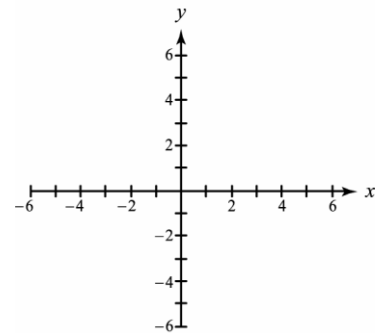1. Evaluate $f(-2)$ if $f(x) = 4 - 3x^2$.   1. _____

2. Write a symbolic representation (formula) for a function   2. _____
   S that calculates the number of seconds in x minutes.
   Evaluate $S(4)$ and interpret your result.   _____
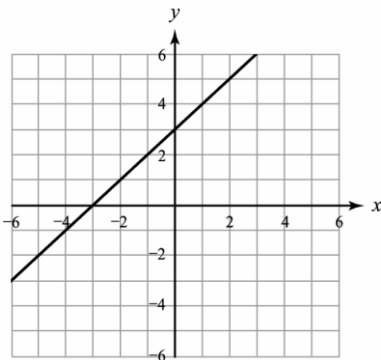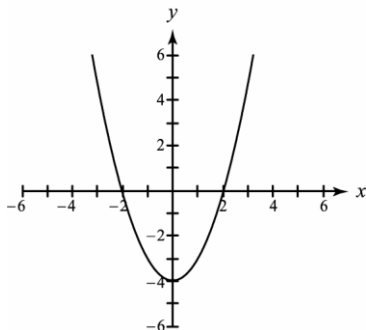
3. Sketch a graph of $f(x) = x^2 - 2$.   3.

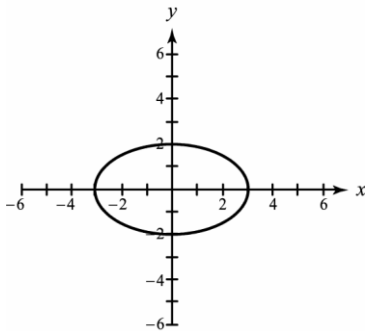
4. Use the graph of f to evaluate $f(-1)$.   4. _____

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

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

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   10. _____
    $\left(\frac{1}{2}, -2\right)$ and $(0, -3)$.

11. Determine the slope of the line shown in the graph.   11. _____
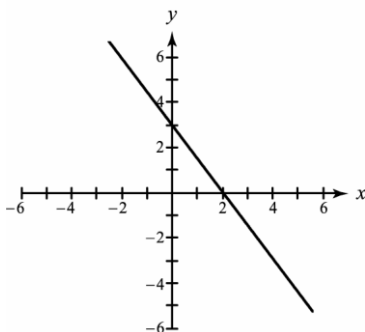
12. Write the slope-intercept form of a line with x-intercept -2 12. _____
    and y-intercept $\frac{3}{2}$.

13. Write the slope-intercept form of the line passing through   13. _____

$(1,3)$ and $\left(\frac{1}{2},1\right)$.

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   15. _____
of the graph of f.

x	−2	0	1	2	3
$f(x)$	8	4	2	0	−2

_____

16. Give the slope-intercept form of a line parallel to   16. _____

$y = 5 - 4x$, passing through $\left(\frac{1}{2},1\right)$.

17. Find the slope-intercept form for the line shown in the graph. 17. _____
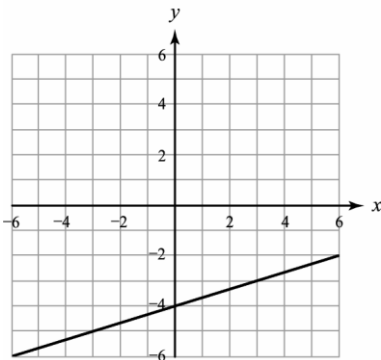
18. Use the graph in #17 to find the equation of a line that passes 18. _____
through the origin and is perpendicular to the given line.

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

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

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

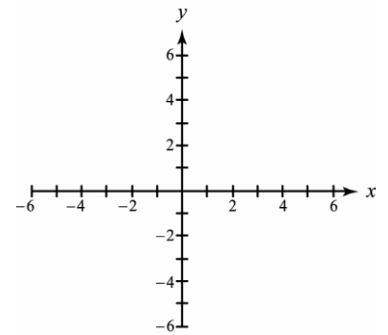   1. _____

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. _____

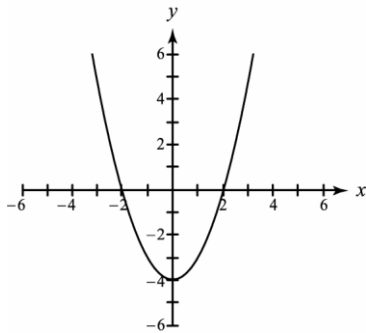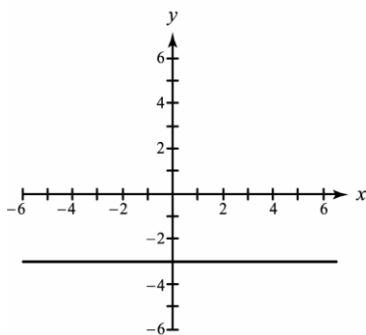   _____

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

                              3.

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

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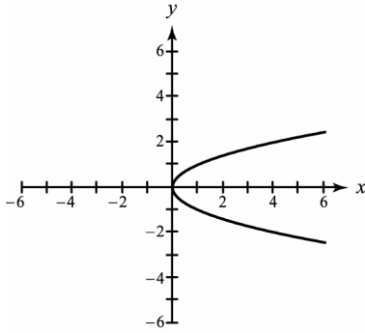
5. Determine the domain and range of f.

                                                                    5. _____

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

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

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

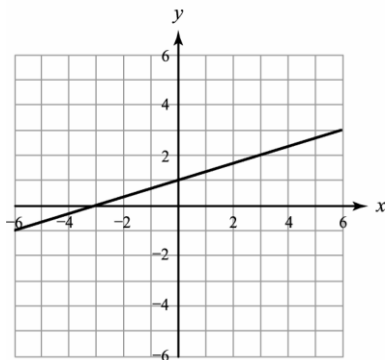9. Find the slope and y-intercept of the graph of $y = 2x - 3$.   9. _____

                                                                    _____

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 12. _____
    and y-intercept $\frac{5}{3}$.

13. Write the slope-intercept form of the line passing through   13. _____

    the points $\left(\frac{3}{2}, 2\right)$ and $\left(1, \frac{1}{2}\right)$.

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

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   15._____
    of the graph of f.

x	−2	−1	0	1	2
$f(x)$	9	6	3	0	−3

                                      _____

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

17. Find the slope-intercept form for the line shown in the graph. 17. _____
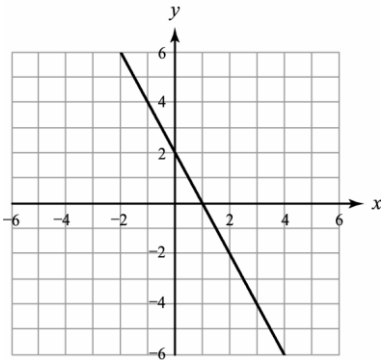
18. Use the graph in #17 to find the equation of a line that passes 18. _____
    through the origin and is perpendicular to the given line.

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

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

1. For the years 1890 to 1960, the median age for a man's first   1. _____
    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.

2. The median price of a single-family home during the years   2. _____
    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
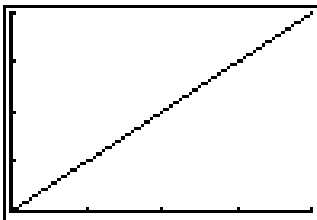   single-family home in 1998.

3. Use your graphing calculator to graph $f(x) = -3x + 5$.   3.
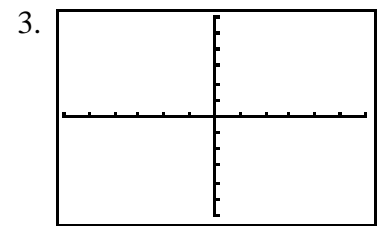
    $[-6, 6, 1]$ by $[-6, 6, 1]$

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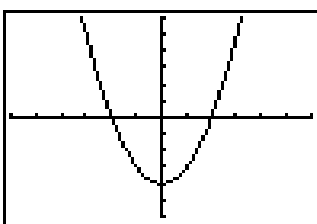   after t hours. How far has Susan traveled after 3 hours?

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

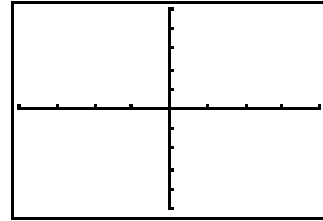5. Determine the domain and range of f.   5. _____

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

6. A function f is represented verbally by "Square the input   6. _____
    x and then subtract 4." Give symbolic, numerical and
    graphical representations of f. Let $x = -3, -2, -1, ..., 3$

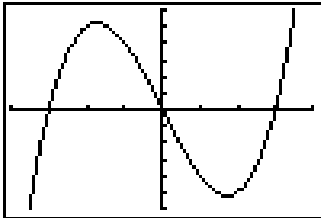   in the numerical representation (table) and let $-4 \le x \le 4$
    for the graph.

$\left[-4, 4, 1\right]$ by $\left[-5, 5, 1\right]$

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

$\left[-4, 4, 1\right]$ by $\left[-6, 6, 1\right]$

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.   9. (a)_____
   What does the slope represent?
    (b) Find the y-intercept of the graph of the function.   (b)_____
        What does the y-intercept represent?

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

11. The graph represents the amount of water (in gallons)   11._____
remaining in a tank after t hours. At what rate was
water being drained from the tank when $2 \le t \le 4$?
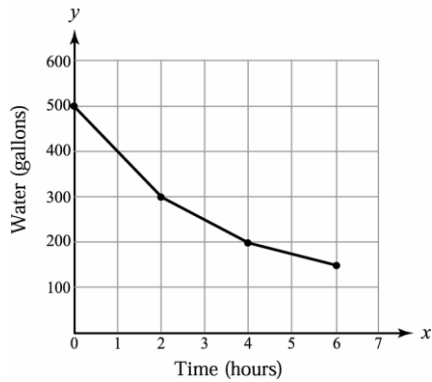
12. Write the slope-intercept form of a line with x-intercept   12. _____
1.29 and y-intercept -2.58.

13. On Labor Day 2000, there were 24.8 travelers (in millions).   13._____
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 $(4, 29.2)$.

14. The following table shows equivalent temperatures in   14._____
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.

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   15. (a)_____
modeled in #14.
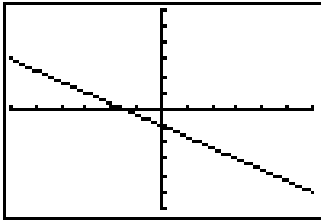(b) What does the y-intercept represent?   (b)_____

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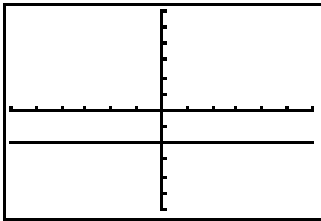$y = 1.28x - 7.18,$ passing through $(2, 3.17)$.

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   18. _____
through the origin and is parallel to the given line.

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

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

    (a) 11   (b) −7   (c) −11   (d) −1
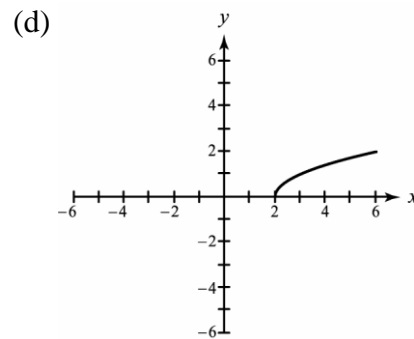
2. Evaluate $f(2)$ if $f(x) = -5x + 6$.   2. _____

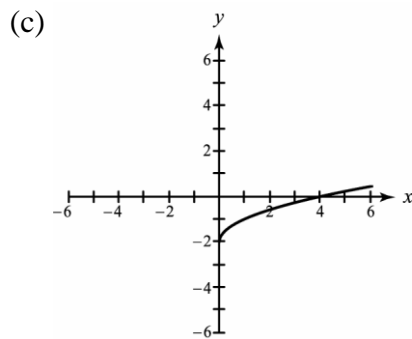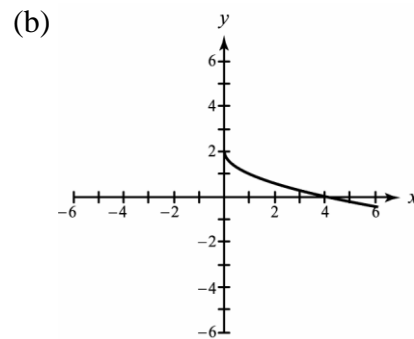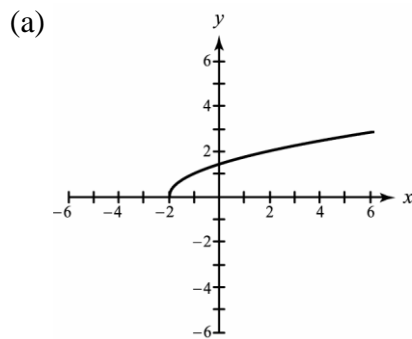   (a) −4   (b) −16   (c) 16   (d) 4

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

(a)

(b)

(c)

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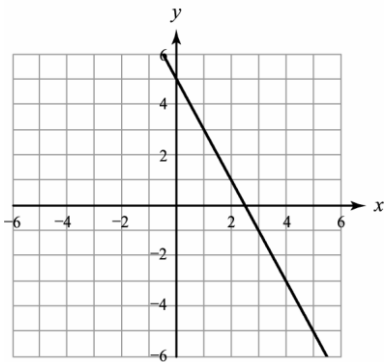
4. Use the graph of f to evaluate $f(1)$.   4. _____

(a) 2   (b) 7   (c) 1   (d) 3
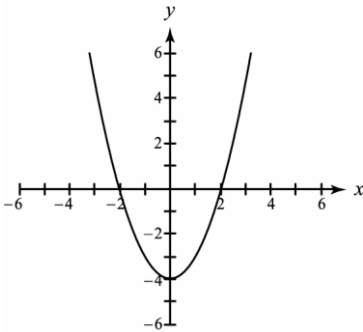
5. Determine the range of f.   5. _____

(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.

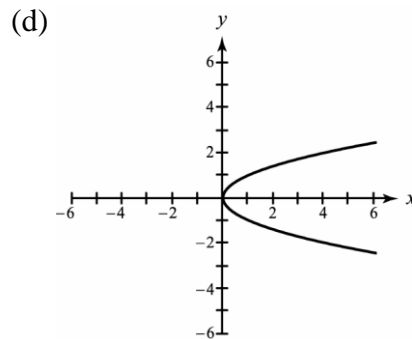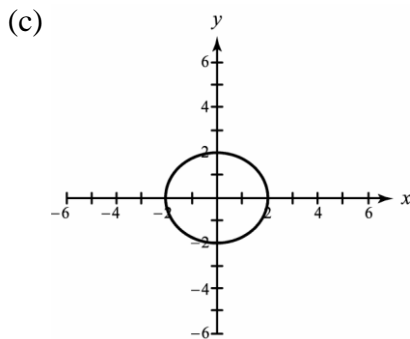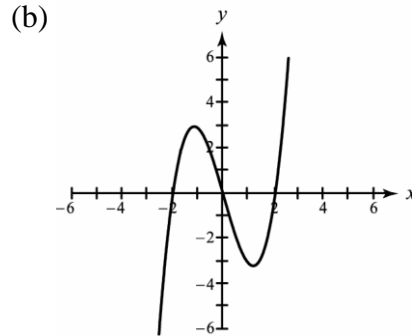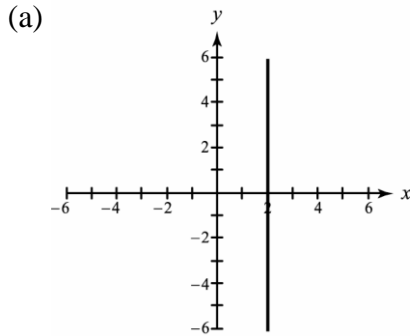(a) $f(x) = \sqrt[3]{x+4}$ (b) $f(x) = x^3 + 4$

(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 $y = 3x - \dfrac{5}{2}$.   9

(a) $m = 3; \left(\frac{5}{6}, 0\right)$ (b) $m = -\dfrac{13}{3}; \left(-\frac{2}{5}, 0\right)$

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

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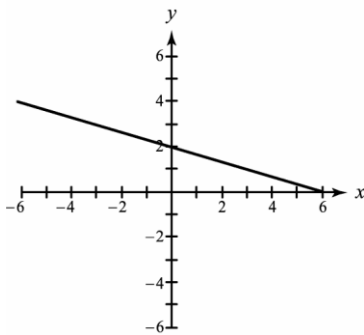
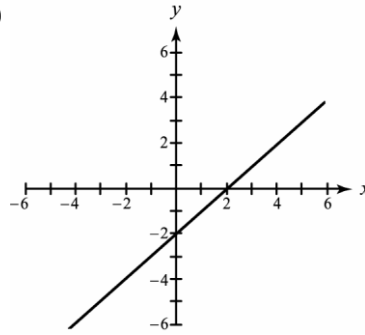(a) 1   (b) 3   (c) $\frac{1}{3}$ (d) -1

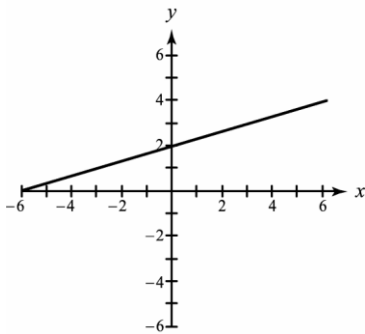11. Determine which line has a slope of $\frac{1}{3}$.   11. _____
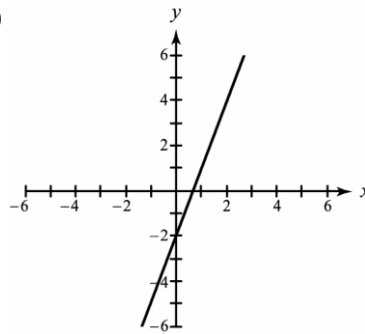
(a)

(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

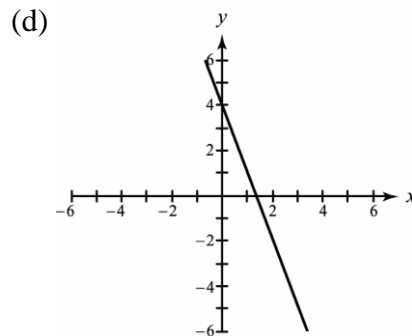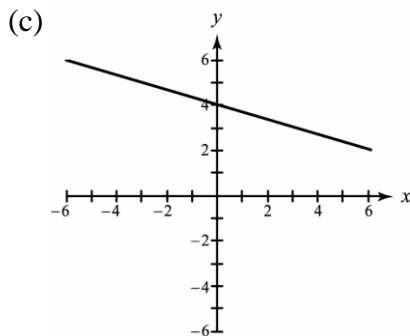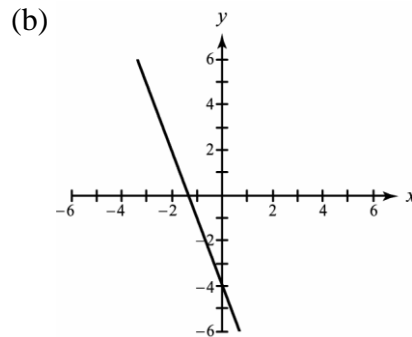15. Let f be a linear function. Find the x- and y-intercepts of the graph of f.   15. _____
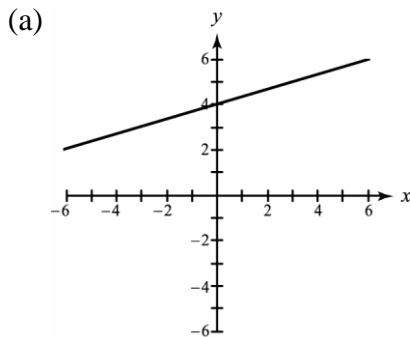
x	-4	-2	-1	0	1
y	-6	0	3	6	9

(a) x-int : $(0,6)$ (b) x-int : $(0,-2)$ (c) x-int : $(6,0)$ (d) x-int : $(-2,0)$

    y-int : $(-2,0)$ y-int : $(6,0)$ y-int : $(0,-2)$ y-int : $(0,6)$

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

    passing through $(4,-3)$.

(a) $y = -\frac{3}{2}x + 3$ (b) $y = \frac{2}{3}x - \frac{17}{3}$ (c) $y = \frac{3}{2}x - 7$ (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   18. _____
    to the line given in #17.

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

(d) $\qquad y = \frac{1}{x} + 4$

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