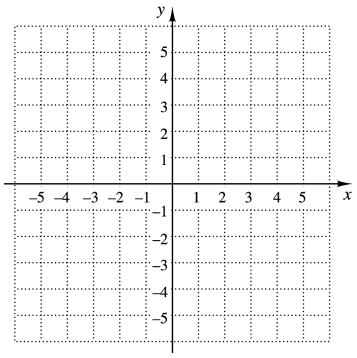
CHAPTER 1 **NAME**_____

TEST FORM A **CLASS_____SCORE_____GRADE_____**

1. Determine whether the ordered pair $\left(-5, \frac{3}{4}\right)$ is a solution of the equation $3x - 8y = 21$.

2. Find the intercepts of $3x - 2y = 6$ and graph the line.



3. Find the distance between (4, 8) and (–7, 6).

4. Find the midpoint of the segment with endpoints (1, 0) and (5, –8).

5. Find an equation of the circle with center (–2, 3) and radius $\sqrt{11}$.

6. Find the center and the radius of the circle $(x+6)^2 + y^2 = 9$.

7. a) Determine whether the relation $\{(-5, 5), (-4, 4), (3, -3), (1, 1)\}$ is a function. Answer "yes" or "no."
   b) Find the domain of the relation.
   c) Find the range of the relation.

8. Given that $f(x) = x^2 - 6x + 2$, find each of the following.
   a) $f(-1)$ b) $f(x+3)$

9. Given that $f(x) = \frac{3-x}{4+x}$, find each of the following.
   a) $f(-4)$ b) $f(-3)$

ANSWERS

1. _____

2. _____
   _____
   See graph.

3. _____

4. _____

5. _____

6. _____

7. a) _____
   b) _____
   c) _____

8. a) _____
   b) _____

9. a) _____
   b) _____

ANSWERS

10. _____

11. a) _____
b) _____

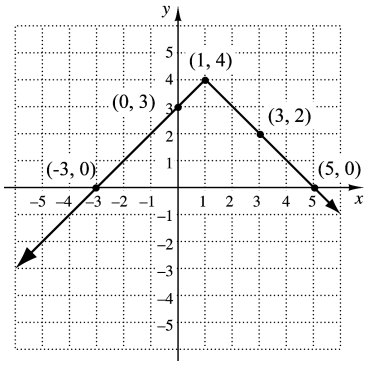
12. _____

13. _____

14. _____

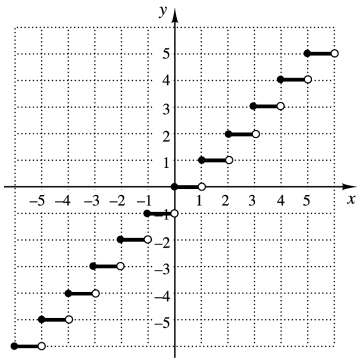
15. a) See graph.
b) _____
c) _____

10. Using the graph, find $f(3)$.

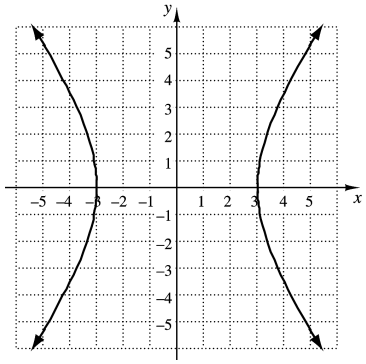


11. Determine whether each graph is that of a function. Answer "yes" or "no."

a)



b)



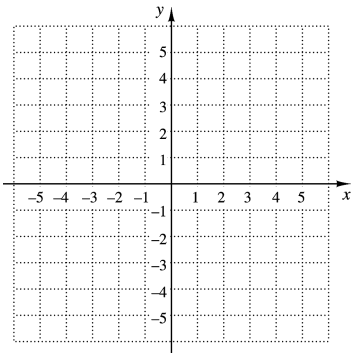
Find the domain of the function.

12. $f(x) = \dfrac{2+x}{4-x}$

13. $g(x) = x^3 - 4$

14. $h(x) = \sqrt{x^2 - 9}$

15. a) Graph: $f(x) = |x-1| + 4$.



b) Visually estimate the domain of $f(x)$.

c) Visually estimate the range of $f(x)$.

Find the slope of the line containing the given points.

16. (4, –2) and (–4, 6)

17. (4, 1) and (–7, 1)

18. (–0.5, 8) and (–0.5, 3)

19. The number of clients served by Scott's Small Motor Repairs was 260 in 2002. It grew to 320 in 2006. Find the average rate of change in number of clients from 2002 to 2006.

20. Find the slope and the y-intercept of the graph of $5x - 2y = -10$.

21. *Total Cost*. Kelly's Deli charges \$1.65 for a bagel with plain cream cheese plus \$0.30 for each additional topping. Write an equation that can be used to determine the total cost, $C(t)$, for a bagel with plain cream cheese and t additional toppings. Then find the total cost of a bagel with plain cream cheese and four additional toppings.

22. Write an equation for a line with $m = -3$ and y-intercept $\left(0, \frac{3}{5}\right)$.

23. Write an equation for the line that passes through (3, –2) and (7, 6).

24. Write an equation of the horizontal line that passes through (–8, 5).

25. Find an equation of the line containing the point (–2, –5) and parallel to the line $4x - 5y = 13$.

ANSWERS

16. _____

17. _____

18. _____

19. _____

20. _____

21. _____

_____

22. _____

23. _____

24. _____

25. _____

ANSWERS

26. _____

27. _____

28. a) _____
b) _____

29. _____

30. _____

31. _____

32. _____

26. Find an equation of the line containing the point (–2, –5) and perpendicular to the line $4x - 5y = 13$.

27. Determine whether the lines are parallel, perpendicular, or neither.

$$2x + 5y = 8$$
$$-5x + 3 = 2y$$

28. The table below shows the average price, in dollars, of a computer at Johnson Office Supply in several recent years.

Year, x	Average Price, P
1994, 0	1560
1997, 3	1450
2000, 6	1250
2003, 9	1025
2006, 12	800

a) Without using a graphing calculator, model the data with a linear function using years 3 and 9 and predict the average price in 2010 using this function.

b) Using a graphing calculator, fit a regression line to the data and use it to predict the average price in 2010. What is the correlation coefficient of the regression line?

Solve.

29. $-3x + 2 = 15$

30. $12x - 5 = 14 + 12x$

31. $\frac{2}{3}n + 6 = 5n - 2$

32. $9(y - 2) = 8y + 14$

33. *Parking lot dimensions*. A parking lot has a perimeter of 500 ft. The width is 20 ft less than the length. Find the dimensions.

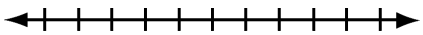
34. *Pricing*. The Book Barn prices its paperbacks by raising the wholesale price 60% and then adding 50¢. What is the wholesale price of a paperback that sells for $7.95?

35. Find the zero(s) of the function $f(x) = 3x + 1$.

36. Solve $P = 2w + 2l$ for w.

37. Solve $K = my - y$ for y.

38. Solve $-6 + 10x > 12x - 8$. Write interval notation for the solution set, then graph the solution set.



Solve and write interval notation for the solution set.

39. $-1 < 3x - 5 \le 8$

40. $3x - 2 \le -3$ *or* $4x + 1 \ge 2$

41. Country Plumbing charges a $25 transportation fee plus $50 per hour for a service call. Tip Top Plumbing charges $62.50 per hour for a service call. For how long a service call is Country Plumbing the less expensive option?

ANSWERS

33. _____

34. _____

35. _____

36. _____

37. _____

38. _____
See graph.

39. _____

40. _____

41. _____

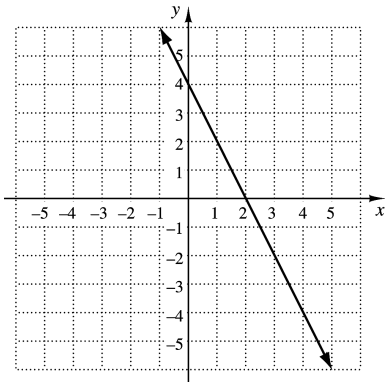
ANSWERS

42. _____

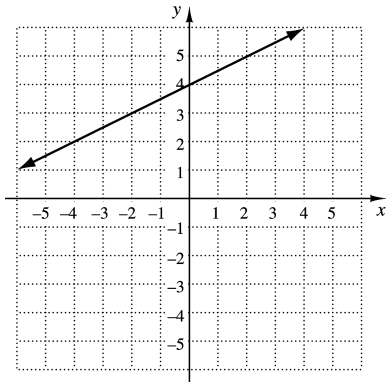
43. _____

42. The graph of $g(x) = 4 - \frac{1}{2}x$ is which of the following?

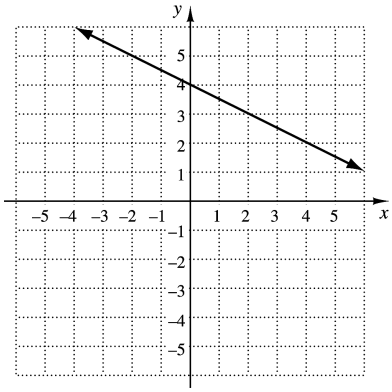
A.



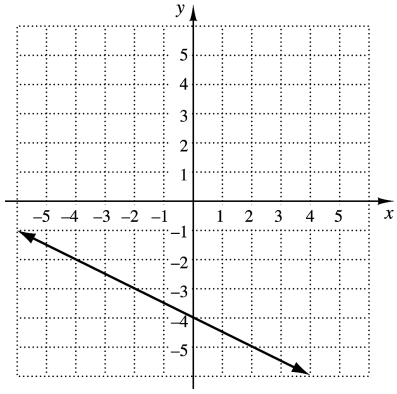
B.



C.



D.



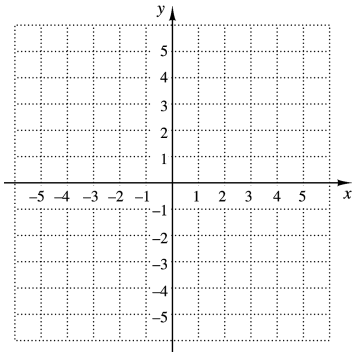
43. Find the domain of $f(x) = \dfrac{\sqrt{4-x}}{|x|-2}$.

CHAPTER 1 **NAME**_____

TEST FORM B **CLASS_____SCORE_____GRADE_____**

1. Determine whether the ordered pair $\left(-2, \frac{3}{2}\right)$ is a solution of the equation $4y - 3x = 12$.

2. Find the intercepts of $x - 4y = 4$ and graph the line.



3. Find the distance between (4, –3) and (6, 1).

4. Find the midpoint of the segment with endpoints (4, –6) and (–3, –12).

5. Find an equation of the circle with center (8, –1) and radius $\sqrt{3}$.

6. Find the center and the radius of the circle $(x+5)^2 + (y+2)^2 = 100$.

7. a) Determine whether the relation $\{(-2, 0), (-1, 1), (-2, 4), (1, 3)\}$ is a function. Answer "yes" or "no."
   b) Find the domain of the relation.
   c) Find the range of the relation.

8. Given that $f(x) = x^2 + x + 1$, find:
   a) $f(-2)$ b) $f(x-3)$

9. Given that $f(x) = \frac{4+x}{2x}$, find:
   a) $f(-2)$; b) $f(0)$.

ANSWERS

1. _____

2. _____
   _____
   See graph.

3. _____

4. _____

5. _____

6. _____

7. a) _____
   b) _____
   c) _____

8. a) _____
   b) _____

9. a) _____
   b) _____

CHAPTER 1 **NAME**_____

TEST FORM B

ANSWERS

10. _____

11. a) _____
b) _____

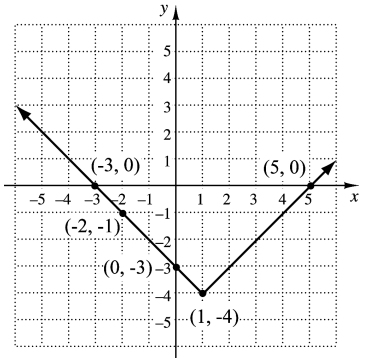
12. _____

13. _____

14. _____

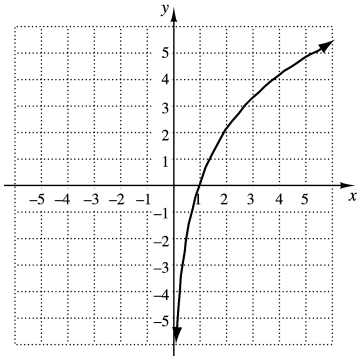
15. a) See graph.
b) _____
c) _____

10. Using the graph, find $f(0)$.

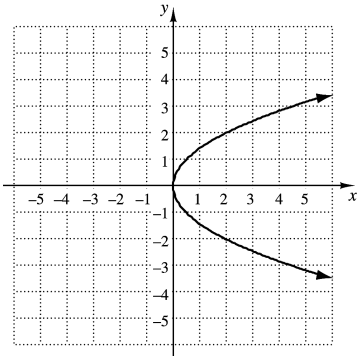


11. Determine whether each graph is that of a function. Answer "yes" or "no."

a)



b)



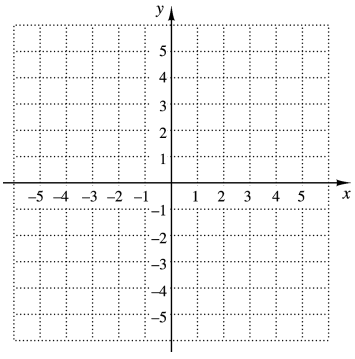
Find the domain of the function.

12. $f(x) = \dfrac{2x}{x-6}$

13. $g(x) = 5 - x^3$

14. $h(x) = \sqrt{x^2 - 16}$

15. a) Graph: $f(x) = \sqrt{x^2 - 4}$.
b) Visually estimate the domain of $f(x)$.
c) Visually estimate the range of $f(x)$.



CHAPTER 1 **NAME**_____

TEST FORM B

Find the slope of the line containing the given points.

16. (0, 5) and (0, –8)

17. (–2, 6) and (–9, –11)

18. (0.3, 4) and (–5, 4)

19. The enrollment at a school in 1998 was 55. In 2006, the enrollment was 145. Find the average rate of change in enrollment from 1998 to 2006.

20. Find the slope and the *y*-intercept of the graph of $6x - 5y = 12$.

21. *Total Cost*. Jackson Park Field Days charges a $5 entrance fee plus $1.25 per ride. Write an equation that can be used to determine the total cost, $C(r)$, of going on r rides at Jackson Park Field Days. Then find the total cost of going on six rides.

22. Write an equation for a line with $m = \frac{2}{3}$ and *y*-intercept (0, –4).

23. Write an equation for the line that passes through (–6, 5) and (10, 2).

24. Write an equation of the vertical line that passes through $(-0.6, 5.4)$.

25. Find an equation of a line containing the point (–2, 6) and parallel to the line $2x + y = 5$.

ANSWERS

16. _____

17. _____

18. _____

19. _____

20. _____

21. _____

_____

22. _____

23. _____

24. _____

25. _____

ANSWERS

26. _____

27. _____

28. a) _____
b) _____

29. _____

30. _____

31. _____

32. _____

26. Find an equation of the line containing the point (–2, 6) and perpendicular to the line $2x + y = 5$.

27. Determine whether the lines are parallel, perpendicular, or neither.

$$6x + 3y = 1$$
$$y = 2x - 5$$

28. The table below shows the average number of lunches per day, sold for various years.

Year, x	Lunches Sold, L
2003, 0	50
2004, 1	65
2005, 2	70
2006, 3	88

a) Without using a graphing calculator, model the data with a linear function using years 1 and 3 and estimate the average number of lunches sold per day in 2009 using this function.

b) Using a graphing calculator, fit a regression line to the data and use it to estimate the average number of lunches per day in 2009. What is the correlation coefficient for the regression line?

Solve.

29. $-8x + 3 = -24$

30. $-4 + 3x = 3x - 4$

31. $\frac{1}{2}n - 5 = -\frac{5}{8}n + 2$

32. $3(y + 4) = 8y - 13$

33. *Room Dimensions*. A rectangular room has a perimeter of 54 ft. The width is four-fifths of the length. What are the dimensions of the room?

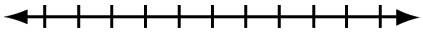
34. *Amount of an Investment*. Gary makes an investment at 4.5% simple interest. At the end of one year, the total value of the investment is \$3448.50. How much was originally invested?

35. Find the zero(s) of the function $f(x) = 6x + 3$.

36. Solve $A = P + Prt$ for t.

37. Solve $k = tx - x$ for x.

38. Solve $18 - x > 3x + 6$. Write interval notation for the solution set, then graph the solution set.



Solve and write interval notation for the solution set.

39. $-4 \le 3x + 1 < 7$

40. $5x + 3 < -4$ *or* $3x + 5 \ge 6$

41. Doreen's Catering charges \$150 for set up plus \$12 per person for parties under 100 people. Jackson's Catering charges \$18 per person for parties under 100 people. For what size party is Jackson's a better deal? Assume that the party will be under 100 people.

ANSWERS

33. _____

34. _____

35. _____

36. _____

37. _____

38. _____
See graph.

39. _____

40. _____

41. _____

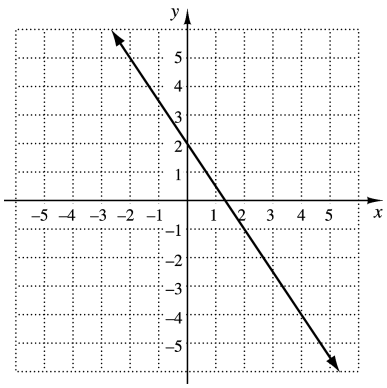
ANSWERS

42. _____

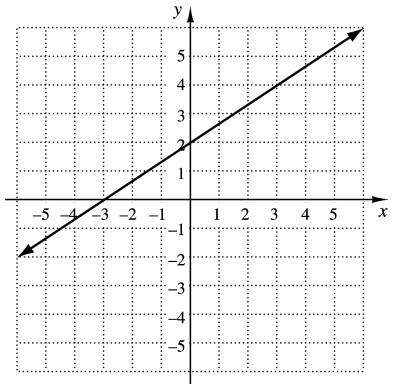
43. _____

42. The graph of $g(x) = 2 - \frac{2}{3}x$ is which of the following?

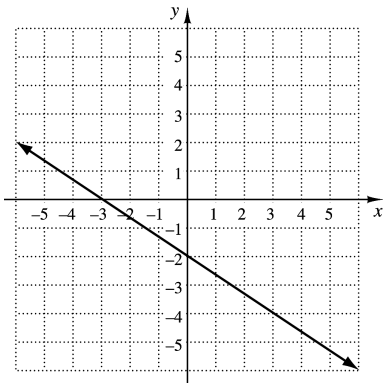
A.



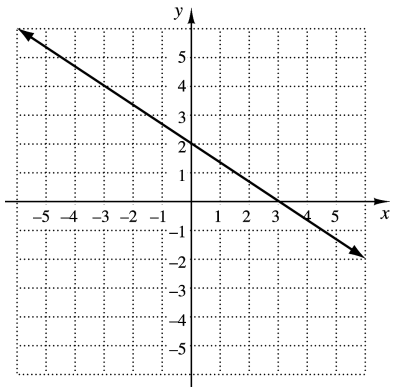
B.



C.



D.



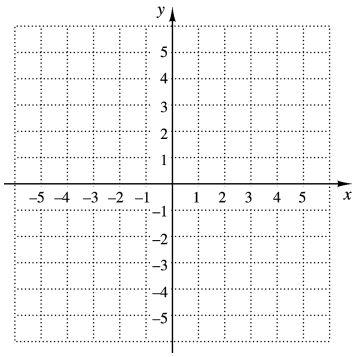
43. Find the domain of $f(x) = \frac{\sqrt{3-x}}{x}$.

CHAPTER 1 **NAME**_____

TEST FORM C **CLASS**_____**SCORE**_____**GRADE**_____

1. Determine whether the ordered pair $\left(6, -\frac{1}{2}\right)$ is a solution of the equation $-2y + 5 = x$.

2. Find the intercepts of $-2x + 3y = 6$ and graph the line.



3. Find the distance between (–5, 8) and (3, –2).

4. Find the midpoint of the segment with endpoints (7, –2) and (10, 4).

5. Find an equation of the circle with center (–2, 0) and radius 16.

6. Find the center and the radius of the circle $(x+3)^2 + (y-6)^2 = 11$.

7. a) Determine whether the relation $\{(2, 1), (3, 2), (-1, 1), (0, -2)\}$ is a function. Answer "yes" or "no."
   b) Find the domain of the relation.
   c) Find the range of the relation.

8. Given that $f(x) = 2x^2 + 6$, find:
   a) $f(-3)$ b) $f(x+a)$

9. Given that $f(x) = \frac{3-x}{3x}$, find:
   a) $f(0)$ b) $f(4)$

ANSWERS

1. _____

2. _____
   _____
   See graph.

3. _____

4. _____

5. _____

6. _____

7. a) _____
   b) _____
   c) _____

8. a) _____
   b) _____

9. a) _____
   b) _____

ANSWERS

10. _____

11. a) _____
    b) _____

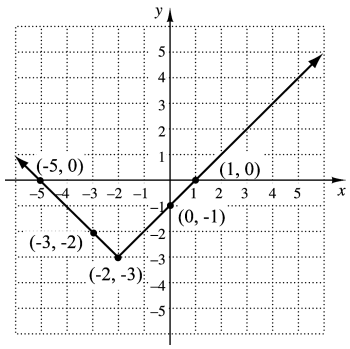
12. _____

13. _____

14. _____

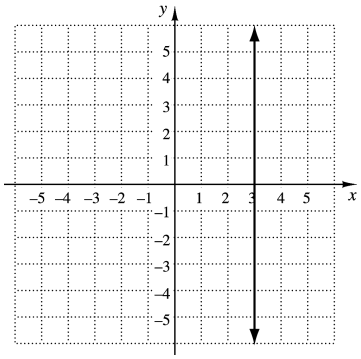
15. a) See graph.
    b) _____
    c) _____

10. Using the graph, find $f(-3)$.

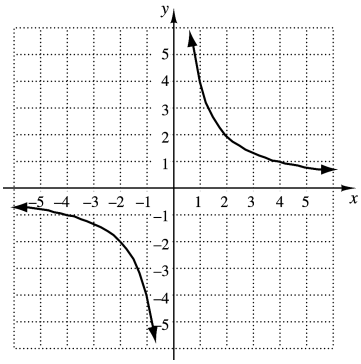


11. Determine whether each graph is that of a function. Answer "yes" or "no."

a)



b)



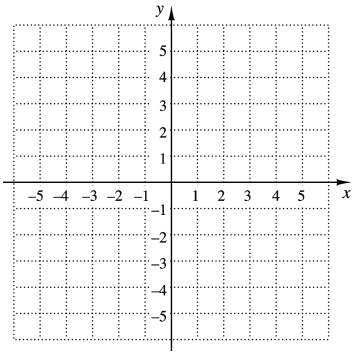
Find the domain of the function.

12. $f(x) = \dfrac{4-x}{3+x}$

13. $g(x) = 8 - x^3$

14. $h(x) = \sqrt{1-x^2}$

15. a) Graph: $f(x) = |x+3| - 2$.
    b) Visually estimate the domain of $f(x)$.
    c) Visually estimate the range of $f(x)$.



CHAPTER 1 **NAME**_____

TEST FORM C

Find the slope of the line containing the given points.

16. (–4, 6) and (3, –5)

17. (3, 8) and (3, –4)

18. (5.6, 8) and (6.4, 8)

19. The population of a town was 12,000 residents in 1990. In 2000, the population was 8000 residents. Find the average rate of change in population from 1990 to 2000.

20. Find the slope and the *y*-intercept of the graph of $3x - 4y = 8$.

21. *Total Cost*. Hideaway Vacation Cabins charges $200 plus $15 per person for a weekly rental fee. Write an equation that can be used to determine the total cost, $C(p)$, of a weekly rental for p persons. Then find the total cost for five persons.

22. Write an equation for a line with $m = -\frac{1}{2}$ and *y*-intercept (0, 7).

23. Write an equation for the line that passes through (6, –5) and (–2, –10).

24. Write an equation of the horizontal line that passes through (5.2, –4.6)

25. Find an equation of the line containing the point (–2, –4) and parallel to the line $-3x + y = 6$.

ANSWERS

16. _____

17. _____

18. _____

19. _____

20. _____

21. _____

_____

22. _____

23. _____

24. _____

25. _____

ANSWERS

26. _____

27. _____

28. a) _____
b) _____

29. _____

30. _____

31. _____

32. _____

26. Find an equation of the line containing the point (–2, –4) and perpendicular to the line $-3x + y = 6$.

27. Determine whether the lines are parallel, perpendicular, or neither.

$$4x - 5y = 6$$
$$10y - 8x = 22$$

28. The table below shows the comparison of the cost, in dollars, of a $100,000 life insurance policy for female non-smokers at certain ages.

Age, a	Cost, C
31	170
32	172
33	176
34	178
35	182

a) Without using a graphing calculator, model the data with a linear function using age 32 and 35. Then predict the cost of life insurance for a female non-smoker of age 40.

b) Using a graphing calculator, fit a regression line to the data and use it to predict the cost of life insurance for a female non-smoker of age 40. What is the correlation coefficient for the regression line?

Solve.

29. $4x - 6 = 8$

30. $18 - 3x = -3x + 20$

31. $-\frac{4}{3}n + 5 = \frac{3}{4}n - 1$

32. $3y + 8 = 2(y - 12)$

33. *Rental Miles*. It cost \$27.95 per day plus \$0.15 per mile to rent a car. How many miles was a car driven that was rented for one day and had a rental bill of \$45.95?

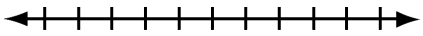
34. *Amount of an Investment*. Kris makes an investment at 5.8% simple interest. At the end of one year, the total value of the investment is \$2909.50. How much was originally invested?

35. Find the zero(s) of the function $f(x) = -2x + 4$.

36. Solve $A = \frac{1}{2}bh$ for h.

37. Solve $Q = mx - 3x$ for x.

38. Solve $4 + x \geq 3x - 6$. Write interval notation for the solution set, then graph the solution set.



Solve and write interval notation for the solution set.

39. $-6 \leq 2x - 3 < 5$

40. $2x \geq 9$ *or* $3x - 5 \leq -2$

41. The formula $F = \frac{9}{5}C + 32$ can be used to convert Celsius temperatures to Fahrenheit temperatures. For what Celsius temperatures is the Fahrenheit temperature below 60° F?

ANSWERS

33. _____

34. _____

35. _____

36. _____

37. _____

38. _____
See graph.

39. _____

40. _____

41. _____

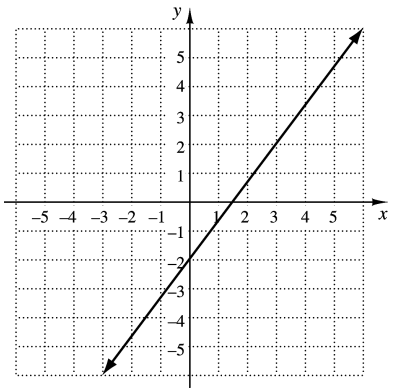
ANSWERS

42. _____

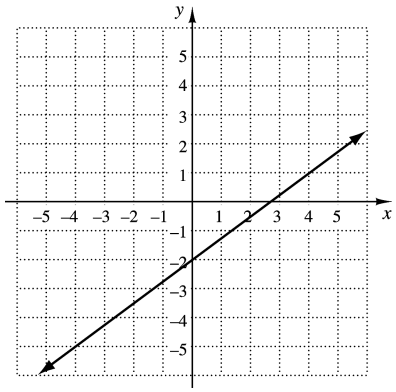
43. _____

42. The graph of $g(x) = -2 + \frac{3}{4}x$ is which of the following?

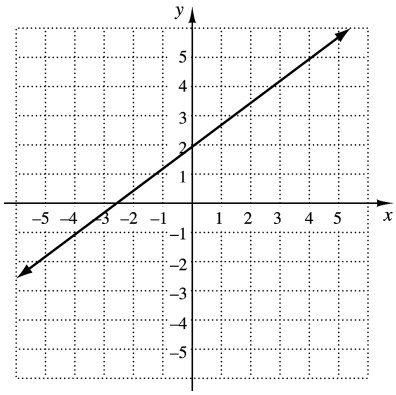
A.



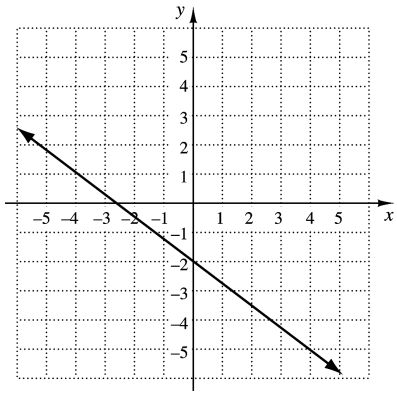
B.



C.



D.



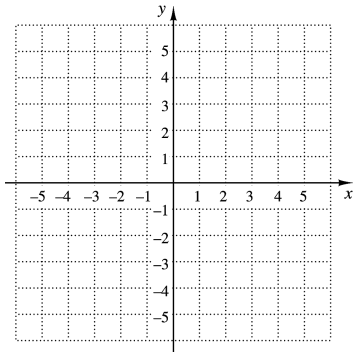
43. Find the domain of $f(x) = \frac{\sqrt{16 - x}}{x^3}$.

CHAPTER 1 **NAME**_____

TEST FORM D **CLASS**_____**SCORE**_____**GRADE**_____

1. Determine whether the ordered pair (5, –4) is a solution of the equation $3x - \frac{1}{2}y = 17$.

2. Find the intercepts of $x - 5y = 5$ and graph the line.



3. Find the distance between (4, –6) and (–7, –9).

4. Find the midpoint of the segment with endpoints (3, 1) and (–8, 3).

5. Find an equation of the circle with center (0, 16) and radius $\sqrt{11}$.

6. Find the center and the radius of the circle $(x-6)^2 + (y+5)^2 = 4$.

7. a) Determine whether the relation $\{(-4, 1), (-3, 2), (-5, 1), (-2, -1)\}$ is a function. Answer "yes" or "no."
   b) Find the domain of the relation.
   c) Find the range of the relation.

8. Given that $f(x) = x^2 + 3x - 4$, find
   a) $f(-2)$; b) $f(x+5)$.

9. Given that $f(x) = \frac{x}{x-5}$, find:
   a) $f(-4)$ b) $f(5)$

ANSWERS

1. _____

2. _____
   _____
   See graph.

3. _____

4. _____

5. _____

6. _____

7. a) _____
   b) _____
   c) _____

8. a) _____
   b) _____

9. a) _____
   b) _____

CHAPTER 1 **NAME**_____

TEST FORM D

ANSWERS

10. _____

11. a) _____
b) _____

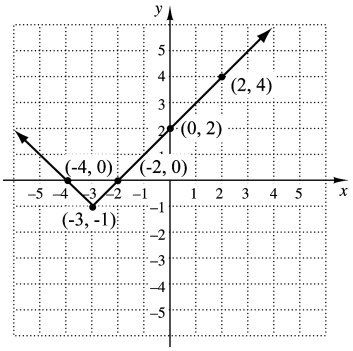
12. _____

13. _____

14. _____

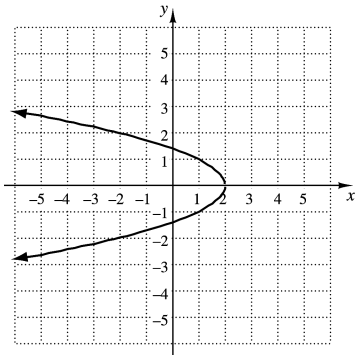
15. a) See graph.
b) _____
c) _____

10. Using the graph, find $f(0)$.

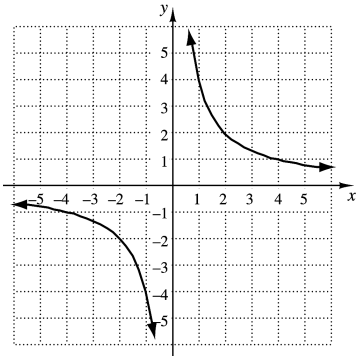


11. Determine whether each graph is that of a function. Answer "yes" or "no."

a)



b)



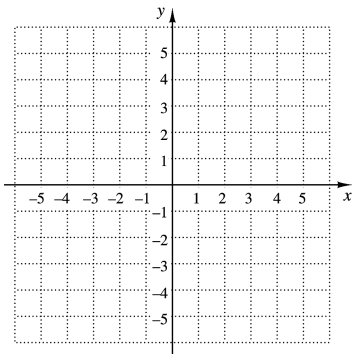
Find the domain of the function.

12. $f(x) = \dfrac{x-3}{x+6}$

13. $g(x) = x^3 + 27$

14. $f(x) = \sqrt{16 - x^2}$

15. a) Graph: $f(x) = \sqrt{x^2 - 9}$.
b) Visually estimate the domain of $f(x)$.
c) Visually estimate the range of $f(x)$.



CHAPTER 1 **NAME**_____

TEST FORM D

Find the slope of the line containing the given points.

16. (3, 6) and (–7, –2)

17. (–2, 5) and (–2, 6)

18. (1.5, 3.2) and (–4.0, 3.2)

19. The number of inquiries the first week was 15. The number of inquiries the fourth week was 79. Find the average rate of change in number of inquiries from the first week to the fourth week.

20. Find the slope and the *y*-intercept of the graph of $6x - 3y = 2$.

21. *Total Cost*. House of Pizza charges $8.25 for a cheese pizza plus $0.75 for each additional topping. Write an equation that can be used to determine the total cost, $C(t)$, of a cheese pizza with t additional toppings. Then find the total cost of a cheese pizza with three additional toppings.

22. Write an equation for a line with $m = -\frac{3}{4}$ and *y*-intercept (0, 6).

23. Write an equation for the line that passes through (4, –6) and (5, 3).

24. Write an equation of the vertical line that passes through (4, –3).

25. Find an equation of the line containing the point (6, –3) and parallel to the line $2x + 5y = -8$.

ANSWERS

16. _____

17. _____

18. _____

19. _____

20. _____

21. _____

_____

22. _____

23. _____

24. _____

25. _____

ANSWERS

26. _____

27. _____

28. a) _____
b) _____

29. _____

30. _____

31. _____

32. _____

26. Find an equation of the line containing the point (6, –3) and perpendicular to the line $2x + 5y = -8$.

27. Determine whether the lines are parallel, perpendicular, or neither.

$$y + 2x = 8$$
$$8x = 15 - 4y$$

28. The table below shows revenue, in thousands of dollars, of a bike shop for several years.

Year, x	Total Revenue, R (in thousands)
2000, 0	85
2001, 1	94
2002, 2	97
2004, 4	100
2006, 6	105

a) Without using a graphing calculator, model the data with a linear function using years 1 and 6 and, using this function, predict the revenue in year 10.
b) Using a graphing calculator, fit a regression line to the data and use it to predict the revenue in year 10. What is the correlation coefficient for the regression line?

Solve.

29. $5x - 3 = 6$

30. $16y - 5 = -5 + 16y$

31. $\frac{4}{5}n + 2 = \frac{3}{4}n - 8$

32. $3(y + 4) = 6y - 9$

33. *Room Dimensions*. A rectangular room has a perimeter of 60 ft. The width is two-thirds of the length. What are the dimensions of the room?

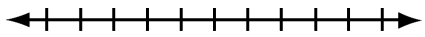
34. *Pricing*. Rosie's Books prices its books by raising the wholesale price 40% and adding 50¢. What is the wholesale price of a book that sells for $39.95? Round to the nearest cent.

35. Find the zero(s) of $f(x) = 4x - 5$.

36. Solve $PV = nrt$ for r.

37. Solve $M = x - nx$ for x.

38. Solve $x + 4 \geq -2x - 5$. Write interval notation for the solution set, then graph the solution set.



Solve and write interval notation for the solution set.

39. $-3 \leq 5x + 2 < 10$

40. $4x + 6 \leq 8$ *or* $3x > 2$

41. The Fitness Center charges $20 per month plus $2.50 per visit for use of its gym. Sunshine Gym charges $40 per month for unlimited use of its gym. For how many visits per month is Sunshine Gym the less expensive choice?

ANSWERS

33. _____

34. _____

35. _____

36. _____

37. _____

38. _____
See graph.

39. _____

40. _____

41. _____

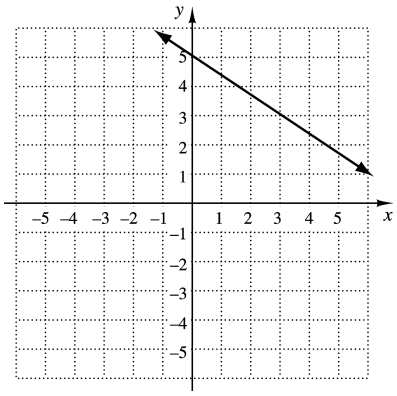
ANSWERS

42. _____

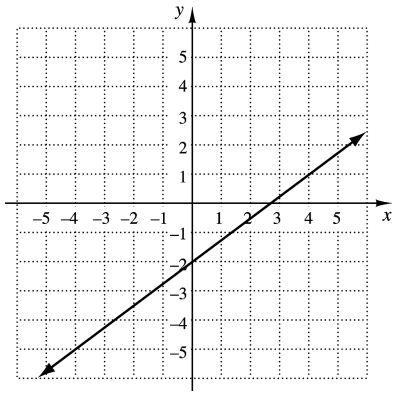
43. _____

42. The graph of $y = 5 - \frac{3}{2}x$ is which of the following?

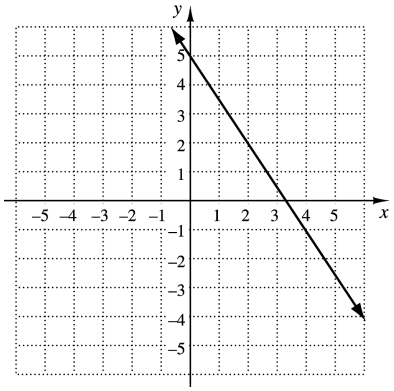
A.



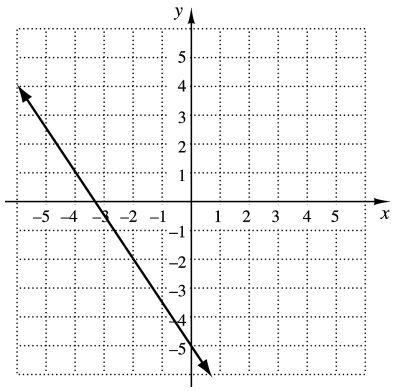
B.



C.



D.



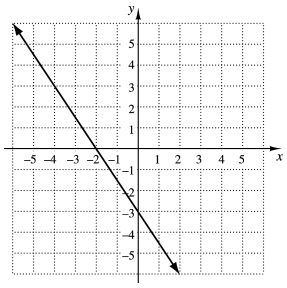
43. Find the domain of $f(x) = \frac{\sqrt{x-9}}{|x|-15}$.

CHAPTER 1 **NAME**_____

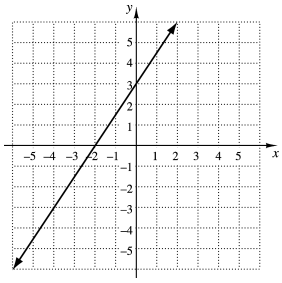
TEST FORM E **CLASS_____SCORE_____GRADE_____**

1. Which of the following represents the graph of $3x - 2y = -6$?

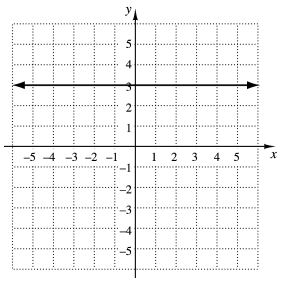
a)



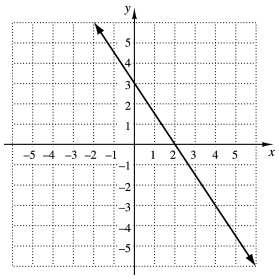
b)



c)



d)



2. Find the distance between (–8, 4) and (3, 6). Round to three decimal places.
   a) 11.180 b) 5.385 c) 14.866 d) 3.606

3. Find the midpoint of the segment with endpoints (5, 8) and (–4, 12).
   a) $\left(\frac{9}{2}, 10\right)$ b) $\left(-\frac{1}{2}, 10\right)$ c) $\left(\frac{1}{2}, 10\right)$ d) (1, 20)

4. Find an equation of the circle with center (–2, 3) and radius $\sqrt{6}$.
   a) $(x+2)^2 + (y-3)^2 = 36$ b) $(x-2)^2 + (y-3)^2 = 36$
   c) $(x-2)^2 + (y-3)^2 = 6$ d) $(x+2)^2 + (y-3)^2 = 6$

5. Find the center and radius of the circle $(x-8)^2 + (y-5)^2 = 16$.
   a) (8, 5); 4 b) (8, 5); 16 c) (8, 5); 256 d) (–8, –5); 4

ANSWERS

1. _____
2. _____
3. _____
4. _____
5. _____

ANSWERS

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

6. Determine which relation is not a function.
   a) $\{(7, 6), (8, 5), (-4, 2), (7, 3)\}$
   b) $\{(6, 5), (3, -2), (-4, 5), (-2, 1)\}$
   c) $\{(-1, -1), (2, 3), (5, -8), (-4, 2)\}$
   d) $\{(-8, -6), (-6, -8), (5, 3), (3, 5)\}$

7. Find the domain of the function $\{(-5, 6), (2, -8), (7, 12), (-2, -8)\}$.
   a) $\{6, -8, 12\}$ b) $\{-5, 6, 2, -8, 7, 12, -2\}$
   c) $\{-5, 2, 7, -2\}$ d) $\{6, 2, 7, 12\}$

8. Given that $f(x) = 4 - x^3$, find $f(-3)$.
   a) 13 b) 31 c) –23 d) –5

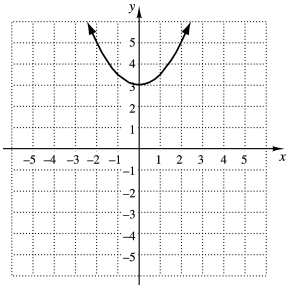
9. Given that $f(x) = 4 - x^2$, find $f(x-2)$.
   a) $8 - 2x$ b) $-x^2$
   c) $4x - x^2$ d) $-x^2 - 4x$

10. Find the domain of $f(x) = \sqrt{36 - x^2}$.
   a) $(-\infty, \infty)$ b) $(-\infty, -6] \cup [6, \infty)$
   c) $[-6, 6]$ d) $(-6, 6)$

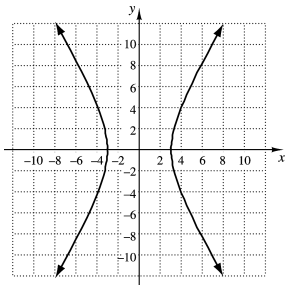
11. Find the domain of $f(x) = \dfrac{x-5}{2-x}$.
   a) $(-\infty,5) \cup (5,\infty)$ b) $(-\infty,-2) \cup (-2,\infty)$
   c) $(-\infty,2) \cup (2,5) \cup (5,\infty)$ d) $(-\infty,2) \cup (2,\infty)$

12. Determine which of the following graphs does not represent a function.

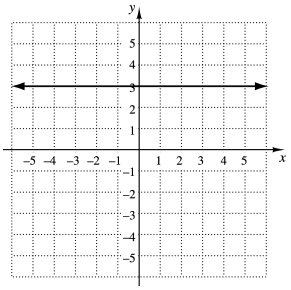
a)



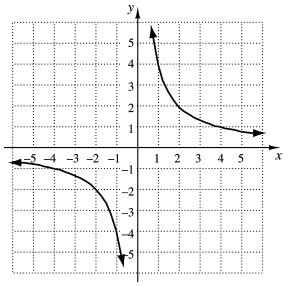
b)



c)

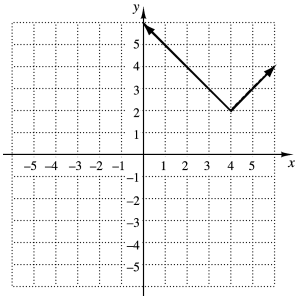


d)

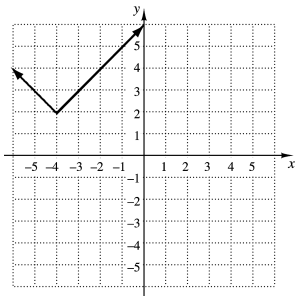


13. Which of the following represents the graph of $f(x) = |x - 4| + 2$?

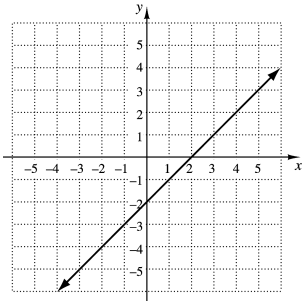
a)



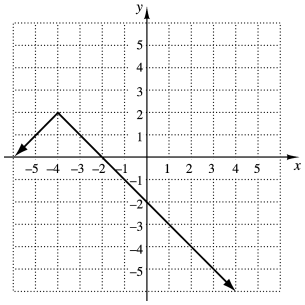
b)



c)



d)



ANSWERS

12. _____

13. _____

ANSWERS

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

14. Find the slope of the line containing the points (8, –5) and (3, 4).

a) $-\frac{5}{9}$ b) $-\frac{1}{5}$ c) $\frac{9}{5}$ d) $-\frac{9}{5}$

15. Find the slope of the line containing the points (–3, –6) and (–3, 9).

a) Not defined b) $\frac{2}{5}$ c) –2 d) 0

16. Jess had packed 6 crates by 8 a.m. By 11 a.m., she had packed 24 crates. Find the average rate of change in crates packed from 8 a.m. to 11 a.m.

a) 4.5 crates/hr b) 18 crates/hr
c) 8 crates/hr d) 6 crates/hr

17. Find the *y*-intercept of the graph $6x-4y=-5$.

a) $\left(0,-\frac{5}{4}\right)$ b) $\left(-\frac{5}{6},0\right)$ c) $\left(0,-\frac{4}{5}\right)$ d) $\left(0,\frac{5}{4}\right)$

18. Find the equation of the line that passes through $(4,-3)$ and $(8,-5)$.

a) $y=-\frac{1}{2}x-1$ b) $y=-2x+11$

c) $y=-2x+5$ d) $y=\frac{1}{2}x+1$

19. Find the equation of the vertical line that passes through $\left(\frac{3}{4},-6\right)$.

a) $x=\frac{3}{4}$ b) $y=\frac{3}{4}$ c) $x=-6$ d) $y=-6$

20. Find the equation of the line containing the point (–2, 3) and parallel to the line $-5x+6y=15$.

a) $y=\frac{5}{6}x+\frac{4}{3}$ b) $y=-\frac{5}{6}x+\frac{4}{3}$

c) $y=-\frac{6}{5}x+\frac{3}{5}$ d) $y=\frac{5}{6}x+\frac{14}{3}$

21. Find the equation of the line containing the point $(-1, -3)$ and perpendicular to the line $-2x + 3y = 6$.

a) $y = \frac{2}{3}x - \frac{7}{3}$ b) $y = -\frac{3}{2}x - \frac{3}{2}$

c) $y = -\frac{3}{2}x - \frac{9}{2}$ d) $y = \frac{3}{2}x - \frac{3}{2}$

22. The table below shows the study time for a particular chapter in a math class and the corresponding test grade for that chapter.

Study Time (in min), t	Test Grade (in percent), G
40	77
60	83
120	85
200	91
300	95

Without using a graphing calculator, model the data with a linear function using 60 min and 120 min.

a) $G(t) = \frac{1}{30}t + 83$ b) $G(t) = \frac{1}{30}t + 81$

c) $G(t) = 30t + 81$ d) $G(t) = \frac{1}{20}t + 83$

23. Use the function in Exercise 22 to predict the test grade for a student who studies 240 min.

a) 89 b) 87 c) 95 d) 91

24. Use a graphing calculator to fit a regression line to the data in Exercise 22.

a) $G(t) = 0.00015x^2 + 0.11x + 74.4$

b) $G(t) = 0.06t + 74.23$

c) $G(t) = 0.06t + 77.12$

d) $G(t) = 77.12t + 0.06$

25. What is the correlation coefficient for the line in Exercise 24?

a) 0.0630662021 b) 0.9280473641

c) 77.1184669 d) 0.9633521496

ANSWERS

21. _____

22. _____

23. _____

24. _____

25. _____

ANSWERS

26. _____

27. _____

28. _____

29. _____

30. _____

31. _____

32. _____

26. Solve: $4(y-2)=10y+5$.

a) $-\frac{6}{13}$ b) $-\frac{13}{6}$ c) $-\frac{7}{6}$ d) $\frac{1}{2}$

27. The perimeter of a triangle is 33 ft. Two legs of the triangle are the same length. The third leg is three-fourths the length of each other leg. Find the length of the shortest leg.

a) 9 ft b) 11 ft c) 12 ft d) 15 ft

28. Find the zero of $f(x)=3x-4$.

a) $-\frac{4}{3}$ b) $\frac{4}{3}$ c) $-\frac{3}{4}$ d) $\frac{3}{4}$

29. Solve $P = Irt$ for t.

a) $t = P - Ir$ b) $t = PIr$

c) $t = \frac{Ir}{P}$ d) $t = \frac{P}{Ir}$

30. Solve: $-10 < 3x+3 \le 4$.

a) $\left[-\frac{13}{3}, \frac{1}{3}\right)$ b) $\left[-\frac{1}{3}, \frac{13}{3}\right)$

c) $\left(-\frac{13}{3}, \frac{1}{3}\right]$ d) $\left(-\frac{7}{3}, \frac{1}{3}\right]$

31. The Marquee charges $10 per month for membership plus $2.50 per movie rental. Hollywood Hits charges $4 per movie rental. For what number of movie rentals per month is The Marquee the less expensive option?

a) More than 6 b) More than 7

c) Less than 7 d) Less than 6

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32. Find the point on the y-axis that is equidistant from (–8, –6) and (4, –3).

a) $\left(-\frac{75}{8}, 0\right)$ b) $\left(0, -\frac{75}{8}\right)$

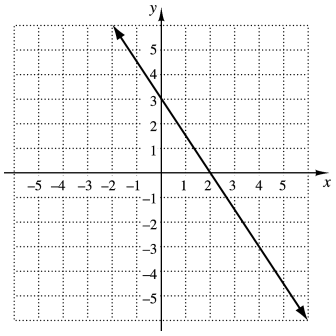
c) $\left(0, -\frac{25}{2}\right)$ d) $\left(0, -\frac{9}{2}\right)$

CHAPTER 1 **NAME**_____

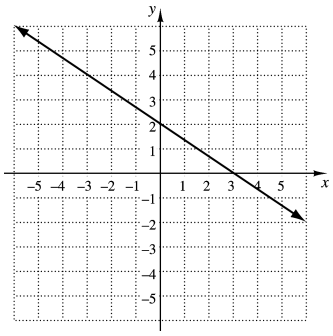
TEST FORM F **CLASS_____SCORE_____GRADE_____**

1. Which of the following represents the graph of $3x + 2y = 6$?

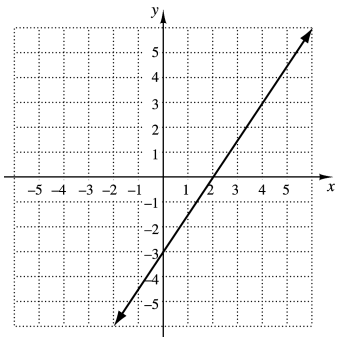
a)



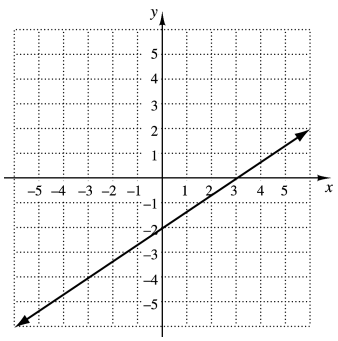
b)



c)



d)



2. Find the distance between (6, –2) and (–8, –10). Round to three decimal places.
   a) 22.000 b) 16.125 c) 12.166 d) 8.246

3. Find the midpoint of the segment with endpoints (7, –5) and (–3, –9).
   a) $(4, 14)$ b) $(2, -2)$ c) $(2, -7)$ d) $(5, -7)$

4. Find an equation of the circle with center (6, –5) and radius $\sqrt{7}$.
   a) $(x-6)^2 + (y+5)^2 = 49$ b) $(x-6)^2 + (y+5)^2 = 7$
   c) $(x+6)^2 + (y-5)^2 = 7$ d) $(x+6)^2 + (y-5)^2 = 49$

5. Find the center and radius of the circle $(x+2)^2 + (y-4)^2 = 25$.
   a) (–2, 4); 5 b) (–2, 4); 12.5
   c) (2, –4); 5 d) (–2, 4); 25

ANSWERS

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2. _____
3. _____
4. _____
5. _____

ANSWERS

6. _____

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10. _____

11. _____

6. Determine which relation is a function.
   a) $\{(5,-8),(6,3),(5,4),(2,0)\}$
   b) $\{(0,1),(1,2),(-1,2),(0,-1)\}$
   c) $\{(3,-4),(8,-4),(5,-2),(2,4)\}$
   d) $\{(2,4),(5,8),(5,3),(7,6)\}$

7. Find the domain of the function $\{(4,-8),(-2,1),(6,-5),(-3,-6)\}$.
   a) $\{8,1,-5,-6\}$ b) $\{4,8,2,1,6,-5,-3,-6\}$
   c) $\{4,-2,6,-3\}$ d) $\{1,4,6,8\}$

8. Given that $f(x)=6x^2+x-1$, find $f(-2)$.
   a) –27 b) 25 c) 141 d) 21

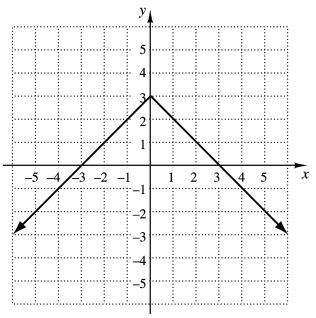
9. Given that $f(x)=6x^2+x-1$, find $f(x+1)$.
   a) $6x^2+x+6$ b) $6x^2+13x+6$
   c) $6x^2+x+1$ d) $6x^2+13x+5$

10. Find the domain of $f(x)=\sqrt{x^2-16}$.
    a) $(-\infty,\infty)$ b) $(-\infty,-4)\cup(4,\infty)$
    c) $(-\infty,-4]\cup[4,\infty)$ d) $[-4,4]$

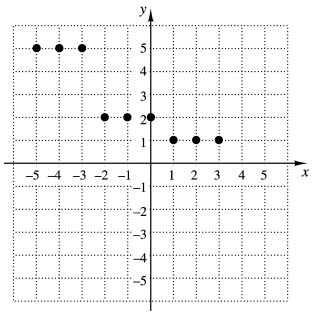
11. Find the domain of $f(x)=\dfrac{4-x}{x+2}$.
    a) $(-\infty,-2)\cup(-2,\infty)$ b) $(-\infty,-2)\cup(-2,4)\cup(4,\infty)$
    c) $(-\infty,4)\cup(4,\infty)$ d) $(-\infty,2)\cup(2,\infty)$

12. Determine which of the following graphs does not represent a function.

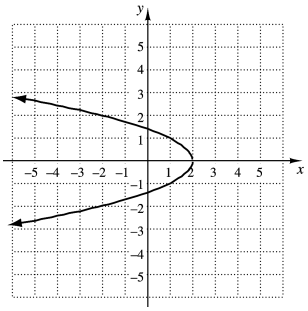
a)



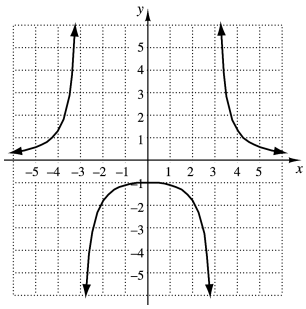
b)



c)

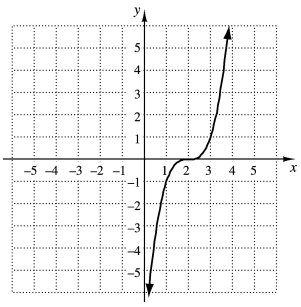


d)

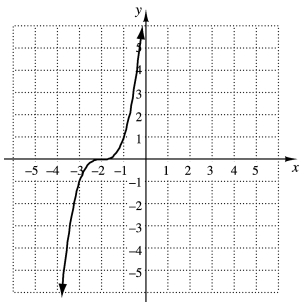


13. Which of the following represents the graph of $f(x) = x^3 - 2$?

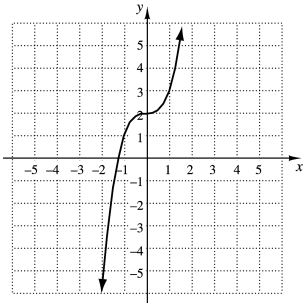
a)



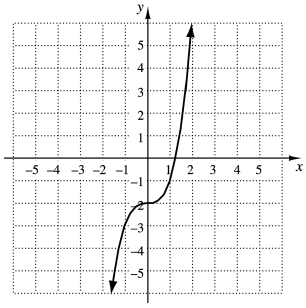
b)



c)



d)



ANSWERS

12. _____

13. _____

ANSWERS

14. _____

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17. _____

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20. _____

14. Find the slope of the line containing the points (–2, 3) and (–8, –6).

a) $\frac{2}{3}$ b) $\frac{3}{2}$ c) $-\frac{3}{2}$ d) $\frac{3}{10}$

15. Find the slope of the line containing the points (–4, –6) and (8, –6).

a) Not defined b) 1

c) $\frac{1}{3}$ d) 0

16. Joe's Used Cars sold 50 cars in 2001. In 2006, they sold 180 cars. Find the average rate of change in cars sold from 2001 to 2006.

a) increased 32.5 cars/yr b) increased 21.7 cars/yr

c) increased 130 cars/yr d) increased 26 cars/yr

17. Find the *y*-intercept of the graph $-3x+4y=-8$.

a) (0, –2) b) (0, 2) c) $\left(\frac{8}{3},0\right)$ d) $\left(0,\frac{8}{3}\right)$

18. Find the equation of the line that passes through $(7,6)$ and $(8,9)$.

a) $y=-3x+27$ b) $y=\frac{1}{3}x+\frac{11}{3}$

c) $y=3x-15$ d) $y=3x+15$

19. Find the equation of the horizontal line that passes through $\left(-\frac{1}{2},12\right)$.

a) $x=-\frac{1}{2}$ b) $y=-\frac{1}{2}$ c) $x=12$ d) $y=12$

20. Find the equation of the line containing the point (–2, 6) and parallel to the line $4x+5y=12$.

a) $y=-\frac{4}{5}x-\frac{14}{5}$ b) $y=-\frac{4}{5}x+\frac{22}{5}$

c) $y=\frac{4}{5}x+\frac{38}{5}$ d) $y=-\frac{4}{5}x-\frac{22}{5}$

21. Find the equation of the line containing the point (–5, 8) and perpendicular to the line $3x - 5y = 10$.

a) $y = -\frac{3}{5}x + 5$ b) $y = \frac{3}{5}x + 11$

c) $y = -\frac{5}{3}x - \frac{1}{3}$ d) $y = -\frac{5}{3}x + \frac{1}{3}$

22. The table below shows the average yearly income, in dollars, of individuals based on years of schooling.

Years of Schooling, x	Average Income, I
8	\$16,000
10	\$19,000
12	\$25,000
14	\$28,000

Without using a graphing calculator, model the data with a linear function using 10 years and 14 years.

a) $I(x) = 2250x - 3500$ b) $I(x) = 2250x + 16{,}000$

c) $I(x) = 2250x + 19{,}000$ d) $I(x) = 9000x = 3500$

23. Use the function in Exercise 22 to estimate the average yearly income for an individual with 16 years of schooling.

a) \$52,000 b) \$37,600 c) \$34,000 d) \$32,500

24. Use a graphing calculator to fit a regression line to the data in Exercise 22.

a) $I(x) = 2100x - 1100$ b) $I(x) = 2000x$

b) $I(x) = 2250x - 3500$ d) $I(x) = 1100x - 2100$

25. What is the correlation coefficient for the line in Exercise 24?

a) 0.98 b) 2100 c) 1.0 d) 0.9899494937

26. Solve: $2(x + 6) = 3x + 8$.

a) –2 b) –20 c) $-\frac{4}{5}$ d) 4

ANSWERS

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22. _____

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ANSWERS

27. _____

28. _____

29. _____

30. _____

31. _____

32. _____

27. A rectangular rug has a perimeter of $22\frac{1}{2}$ ft. The length is $1\frac{1}{2}$ times the width. Find the width.

a) 9 ft b) $4\frac{1}{2}$ ft c) $7\frac{1}{3}$ ft d) $6\frac{3}{4}$ ft

28. Find the zero of $f(x) = 6 - 5x$.

a) $-\frac{6}{5}$ b) $\frac{6}{5}$ c) $-\frac{5}{6}$ d) $\frac{5}{6}$

29. Solve $S = \frac{1}{2}(a + b + c)$ for b.

a) $b = 2S - 2a - 2c$ b) $b = \frac{1}{2}S - a - c$

c) $b = 2S - a - c$ d) $b = 4S - 2a - 2c$

30. Solve: $-2 < 2x + 1 \le 6$.

a) $\left[-\frac{3}{2}, \frac{5}{2}\right)$ b) $(-4, 3]$ c) $\left(-\frac{1}{2}, \frac{7}{2}\right]$ d) $\left(-\frac{3}{2}, \frac{5}{2}\right]$

31. Joanne's Catering charges \$75 set-up fee plus \$18 per person. At Home Hospitality charges a \$125 set-up fee plus \$15 per person. For what number of people is Joanne's the less expensive option?

a) Fewer than 20 people b) Fewer than 17 people
c) More than 17 people d) More than 16 people

32. Find the point on the x-axis that is equidistant from the points (4, 6) and (–3, 8).

a) $\left(\frac{21}{4}, 0\right)$ b) $(7, 0)$

c) $\left(0, \frac{21}{4}\right)$ d) $\left(-\frac{3}{2}, 0\right)$