

Use Scantron 882E to transfer the answers.

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**

**Solve the equation.**

1)  $(y - 7) - (y + 7) = 9y$

A)  $\left\{-\frac{14}{9}\right\}$

B)  $\left\{-\frac{2}{9}\right\}$

C)  $\left\{-\frac{14}{5}\right\}$

D)  $\{-2\}$

1) \_\_\_\_\_

2)  $3m + 7 + 5(2m - 3) = 3(m + 3)$

A)  $\left\{\frac{17}{16}\right\}$

B)  $\left\{\frac{1}{10}\right\}$

C)  $\left\{\frac{17}{10}\right\}$

D)  $\left\{\frac{31}{10}\right\}$

2) \_\_\_\_\_

3)  $-[8x + (2x + 7)] = 1 - (9x + 3)$

A)  $\{-5\}$

B)  $\{-1\}$

C)  $\{3\}$

D)  $\left\{\frac{5}{3}\right\}$

3) \_\_\_\_\_

4)  $\frac{f}{4} - 5 = 1$

A)  $\{16\}$

B)  $\{-24\}$

C)  $\{24\}$

D)  $\{-16\}$

4) \_\_\_\_\_

5)  $\frac{2x}{5} - \frac{x}{3} = 4$

A)  $\{120\}$

B)  $\{-60\}$

C)  $\{-120\}$

D)  $\{60\}$

5) \_\_\_\_\_

6)  $\frac{r+6}{3} = \frac{r+8}{6}$

A)  $\{3\}$

B)  $\{4\}$

C)  $\{-12\}$

D)  $\{-4\}$

6) \_\_\_\_\_

7)  $\frac{3x+8}{5} + \frac{7}{5} = -\frac{7x}{4}$

A)  $\left\{-\frac{4}{47}\right\}$

B)  $\left\{\frac{4}{47}\right\}$

C)  $\left\{\frac{60}{23}\right\}$

D)  $\left\{-\frac{60}{47}\right\}$

7) \_\_\_\_\_

8)  $0.01x + 0.1(x + 20,000) = 2220$

A)  $\{200,000\}$

B)  $\{2000\}$

C)  $\{200\}$

D)  $\{20,000\}$

8) \_\_\_\_\_

**Solve the equation for the specified variable. Use the distributive property to factor as necessary.**

9)  $-8k + ar = r - 8y$  for  $r$

A)  $r = \frac{-8k + a}{1 - 8y}$  or  $r = \frac{8k - a}{8y - 1}$

B)  $r = \frac{a - 1}{8k - 8y}$  or  $r = \frac{1 - a}{-8k + 8y}$

C)  $r = \frac{8k - 8y}{a - 1}$  or  $r = \frac{-8k + 8y}{1 - a}$

D)  $r = \frac{-8k + 8y}{a - 1}$  or  $r = \frac{8k - 8y}{1 - a}$

9) \_\_\_\_\_

**Solve the equation for  $y$ .**

10)  $-5x + 7y = 3$

A)  $y = \frac{-3 - 5x}{7}$

B)  $y = \frac{3 + 5x}{7}$

C)  $y = 35x + 21$

D)  $y = \frac{3 - 5x}{7}$

10) \_\_\_\_\_

Use the variable  $x$  for the unknown, and write an equation representing the verbal sentence. Then solve the problem.

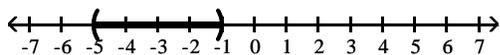
- 11) Four times a number added to 7 times the number equals 33. 11) \_\_\_\_\_  
 A)  $4(x + 7) = 33x; -3$  B)  $4x(7 + x) = 33; -3$   
 C)  $7x + 4x = 33; 3$  D)  $7x - 4x = 33; 3$
- 12) If 3 times a number is added to  $-10$ , the result is equal to 13 times the number. 12) \_\_\_\_\_  
 A)  $3x - (-10) = 13x; 1$  B)  $3x + 10x = 13; 1$   
 C)  $13(3x - 10) = -10; -1$  D)  $3x + (-10) = 13x; -1$
- 13) Four times a number added to 7 times the number equals 44. 13) \_\_\_\_\_  
 A)  $4(x + 7) = 44x; -4$  B)  $7x + 4x = 44; 4$   
 C)  $4x(7 + x) = 44; -4$  D)  $7x - 4x = 44; 4$
- 14) If 4 times a number is added to  $-5$ , the result is equal to 9 times the number. 14) \_\_\_\_\_  
 A)  $4x + (-5) = 9x; -1$  B)  $9(4x - 5) = -5; -1$   
 C)  $4x - (-5) = 9x; 1$  D)  $4x + 5x = 9; 1$
- 15) When  $\frac{1}{4}$  of a number is added to 12, the result is 36. 15) \_\_\_\_\_  
 A)  $\frac{1}{4}x - 12 = 36; 192$  B)  $\frac{1}{4} + x = 36; 36$   
 C)  $12 + \frac{1}{4}x = 36; 96$  D)  $36 + \frac{1}{4}x = 12; 96$

Solve the problem.

- 16) A rectangular Persian carpet has a perimeter of 204 inches. The length of the carpet is 30 in. more than the width. What are the dimensions of the carpet? 16) \_\_\_\_\_  
 A) Width: 87 in.; length: 117 in. B) Width: 66 in.; length: 96 in.  
 C) Width: 72 in.; length: 102 in. D) Width: 36 in.; length: 66 in.

Write an inequality statement involving the letter  $x$  that describes the given graph or interval notation.

- 17) 17) \_\_\_\_\_



- A)  $-5 \leq x < -1$  B)  $-5 \leq x \leq -1$  C)  $-5 < x < -1$  D)  $-5 < x \leq -1$

Solve the problem.

- 18) A car rental company has two rental rates. Rate 1 is \$30 per day plus \$.12 per mile. Rate 2 is \$60 per day plus \$.06 per mile. If you plan to rent for one day, how many miles would you need to drive to pay less by taking Rate 2? 18) \_\_\_\_\_  
 A) more than 500 miles B) more than 1000 miles  
 C) more than 600 miles D) more than 250 miles
- 19) Correct Computers, Inc. finds that the cost to make  $x$  laptop computers is  $C = 2253x + 109,453$ , while the revenue produced from them is  $R = 4042x$  ( $C$  and  $R$  are in dollars). What is the smallest whole number of computers,  $x$ , that must be sold for the company to show a profit? 19) \_\_\_\_\_  
 A) 195,811,417 B) 689,006,635 C) 62 D) 18

Solve the equation.

20)  $|6m + 5| = 6$

A)  $\left\{\frac{1}{5}, -\frac{11}{5}\right\}$

B)  $\left\{-\frac{1}{6}, \frac{11}{6}\right\}$

C)  $\emptyset$

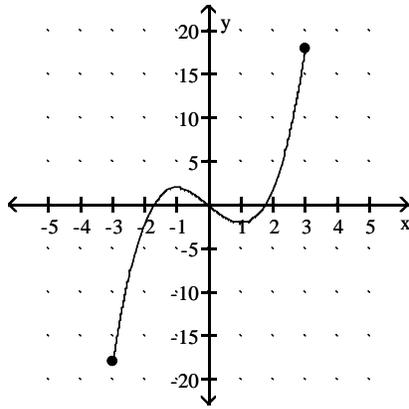
D)  $\left\{\frac{1}{6}, -\frac{11}{6}\right\}$

20) \_\_\_\_\_

For the function represented in the graph, determine the domain or range, as requested.

21) Find the domain.

21) \_\_\_\_\_



A)  $[-3, 3]$

C)  $[-5, 5]$

B) all real numbers

D)  $[-18, 18]$

Find the domain.

22)  $f(x) = \frac{-1}{-6-x}$

22) \_\_\_\_\_

A)  $\{x \mid x \text{ is a real number and } x \neq -6\}$

C)  $\{x \mid x \text{ is a real number and } x \neq 6\}$

B)  $\{x \mid x \text{ is a real number and } x \neq 1\}$

D)  $\{x \mid x \text{ is a real number and } x \neq -1\}$

Determine the slope and the y-intercept.

23)  $2x - 6y = -12$

23) \_\_\_\_\_

A) Slope  $\frac{1}{3}$ , y-intercept  $(0, 2)$

B) Slope 3, y-intercept  $(0, -2)$

C) Slope  $-\frac{1}{3}$ , y-intercept  $(0, -2)$

D) Slope -3, y-intercept  $(0, 2)$

24)  $14y + 3x + 8 = 2 + 3x$

24) \_\_\_\_\_

A) Slope 0, y-intercept  $(0, \frac{3}{7})$

B) Slope  $-\frac{3}{14}$ , y-intercept  $(0, -\frac{9}{7})$

C) Slope  $\frac{3}{14}$ , y-intercept  $(0, -\frac{3}{7})$

D) Slope 0, y-intercept  $(0, -\frac{3}{7})$

Find the slope of the line containing the two given points.

25)  $(-4, -5)$  and  $(9, 3)$

25) \_\_\_\_\_

A)  $-\frac{2}{5}$

B)  $-\frac{8}{13}$

C)  $\frac{8}{13}$

D)  $\frac{13}{8}$

26)  $(-3.3, -12.4)$  and  $(4.4, 0.5)$

26) \_\_\_\_\_

A)  $-\frac{129}{77}$

B)  $\frac{129}{77}$

C)  $-\frac{77}{129}$

D)  $\frac{77}{129}$

If possible, determine the slope.

27)  $x = -3$

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

B) Not defined

C)  $-3$

D)  $0$

27) \_\_\_\_\_

28)  $y = \frac{2}{3}$

A)  $\frac{3}{2}$

B)  $\frac{2}{3}$

C) Not defined

D)  $0$

28) \_\_\_\_\_

29)  $2 \cdot f(x) + 8 = 0$

A)  $-\frac{1}{4}$

B) Not defined

C)  $-4$

D)  $0$

29) \_\_\_\_\_

30)  $4 - 5x = 5 - 2x$

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

B)  $0$

C) Not defined

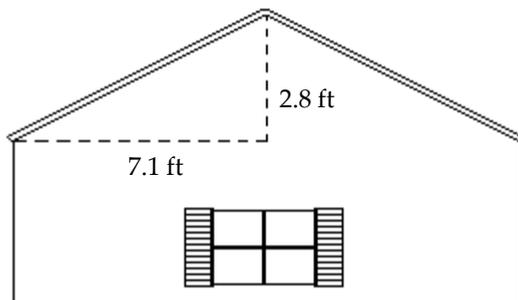
D)  $\frac{1}{3}$

30) \_\_\_\_\_

Find the slope (or rate of change). Use appropriate units.

31) Find the slope (or pitch) of the roof.

31) \_\_\_\_\_



A) 2.54%

B) 253.6%

C) 0.39%

D) 39.4%

Tell whether the lines are "parallel", "perpendicular", or "neither."

32)  $3x - 8y = 15$

$32x + 12y = 15$

A) Parallel

B) Perpendicular

C) Neither

32) \_\_\_\_\_

33)  $6x + 2y = 8$

$24x + 8y = 33$

A) Neither

B) Parallel

C) Perpendicular

33) \_\_\_\_\_

Find a linear function whose graph has the given slope and y-intercept.

34) Slope  $\frac{1}{3}$ , y-intercept  $(0, 2)$

34) \_\_\_\_\_

A)  $f(x) = \frac{1}{3}x + 2$

B)  $f(x) = -\frac{1}{3}x - 2$

C)  $f(x) = -\frac{1}{3}x + 2$

D)  $f(x) = \frac{1}{3}x - 2$

**Find an equation of the line having the specified slope and containing the indicated point. Write your answer in slope-intercept form.**

35)  $m = -8; (6, -3)$  35) \_\_\_\_\_  
A)  $y = -8x + 45$  B)  $y = -8x + 46$  C)  $y = -8x + 43$  D)  $y = 8x + 44$

36)  $m = 5; (0, -5)$  36) \_\_\_\_\_  
A)  $y = 5x + 5$  B)  $y = 5x + 7$  C)  $y = 5x - 5$  D)  $y = -5x - 3$

37)  $m = -\frac{3}{5}; (10, -2)$  37) \_\_\_\_\_  
A)  $y = -\frac{3}{5}x + 4$  B)  $y = \frac{3}{5}x - 4$  C)  $y = -\frac{3}{5}x + \frac{28}{5}$  D)  $y = -\frac{3}{5}x + 8$

38)  $m = -9; (0, 6.9)$  38) \_\_\_\_\_  
A)  $y = -9x + 6.9$  B)  $y = 6.9x + 9$  C)  $y = 6.9x - 9$  D)  $y = -9x - 6.9$

**Find an equation of the line containing the given pair of points**

39)  $(4, 5)$  and  $(5, 9)$  39) \_\_\_\_\_  
A)  $y = -11x + 4$  B)  $y = 4x - 11$  C)  $y = -4x - 11$  D)  $y = -11x - 4$

40)  $(6, -6)$  and  $(-7, 7)$  40) \_\_\_\_\_  
A)  $y = x$  B)  $y = -x$  C)  $y = -\frac{7}{6}x$  D)  $y = -x - 6$

41)  $(0, 0)$  and  $(3, -2)$  41) \_\_\_\_\_  
A)  $y = -\frac{3}{2}x$  B)  $y = -\frac{2}{3}x - 2$  C)  $y = \frac{2}{3}x$  D)  $y = -\frac{2}{3}x$

42)  $(2, -3)$  and  $(-5, 5)$  42) \_\_\_\_\_  
A)  $y = \frac{5}{7}x - \frac{5}{7}$  B)  $y = \frac{8}{7}x - \frac{5}{7}$  C)  $y = -\frac{8}{7}x - \frac{5}{7}$  D)  $y = -\frac{5}{7}x - \frac{5}{7}$

**Find an equation of the line having the specified slope and containing the indicated point. Write your answer in slope-intercept form.**

43)  $m = -4; (0, 1.1)$  43) \_\_\_\_\_  
A)  $y = 1.1x - 4$  B)  $y = -4x - 1.1$  C)  $y = 1.1x + 4$  D)  $y = -4x + 1.1$

**Find an equation of the line containing the given pair of points**

44)  $(-4, -3)$  and  $(-3, -1)$  44) \_\_\_\_\_  
A)  $y = -2x + 5$  B)  $y = 2x + 5$  C)  $y = 5x - 2$  D)  $y = 5x + 2$

45)  $(9, -9)$  and  $(-7, 7)$  45) \_\_\_\_\_  
A)  $y = -x$  B)  $y = -\frac{7}{9}x$  C)  $y = -x - 9$  D)  $y = x$

46)  $(0, 0)$  and  $(7, -8)$  46) \_\_\_\_\_  
A)  $y = \frac{8}{7}x$  B)  $y = -\frac{8}{7}x - 8$  C)  $y = -\frac{7}{8}x$  D)  $y = -\frac{8}{7}x$

47) (2, -2) and (9, 6)

A)  $y = \frac{8}{7}x - \frac{30}{7}$

B)  $y = \frac{4}{7}x - \frac{30}{7}$

C)  $y = -\frac{4}{7}x - \frac{30}{7}$

D)  $y = -\frac{8}{7}x - \frac{30}{7}$

47) \_\_\_\_\_

**Write an equation of the line described.**

48) Through (-5, -2), parallel to  $3x + 5y = 5$

A)  $y = -\frac{5}{3}x - \frac{2}{3}$

B)  $y = -\frac{3}{5}x - 5$

C)  $y = \frac{3}{5}x + 5$

D)  $y = 1x + 1$

48) \_\_\_\_\_

49) Through (-3, -8), perpendicular to  $-8x + 7y = 80$

A)  $y = \frac{7}{8}x - \frac{85}{8}$

B)  $y = -\frac{3}{7}x - \frac{80}{7}$

C)  $y = -\frac{8}{7}x - \frac{8}{7}$

D)  $y = -\frac{7}{8}x - \frac{85}{8}$

49) \_\_\_\_\_

**Solve the problem.**

50) A gas station sells 4820 gallons of regular unleaded gasoline on a day when they charge \$1.35 per gallon, whereas they sell 3922 gallons on a day that they charge \$1.40 per gallon. Find a linear function that expresses gallons sold as a function of price.

A)  $G(p) = -17,960p + 29,044.2$

B)  $G(p) = -17,960p + 29,082$

C)  $G(p) = -17,960p + 29,066$

D)  $G(p) = -17,960p + 29,049.8$

50) \_\_\_\_\_

51) A gas station sells 4820 gallons of regular unleaded gasoline in a day when they charge \$1.35 per gallon, whereas they sell 3884 gallons on a day that they charge \$1.40 per gallon. Find a linear function that expresses gallons sold as a function of price. Use this function to predict the number of gallons sold at a price of \$1.24 per gallon.

A) 6875.89982 gallons

B) 6883.29982 gallons

C) 6888.19982 gallons

D) 6879.19982 gallons

51) \_\_\_\_\_

52) Persons taking a 30-hour review course to prepare for a standardized exam average a score of 620 on that exam. Persons taking a 70-hour review course average a score of 792. Find a linear function  $S(t)$ , which fits this data, and which expresses score as a function of time.

A)  $S(t) = -4.3t + 491$

B)  $S(t) = 4.3t + 491$

C)  $S(t) = 3.87t - 495$

D)  $S(t) = 3.87t + 495$

52) \_\_\_\_\_

**Find the product.**

53)  $2x(3x - 1)(6x + 8)$

A)  $18x^3 + 18x^2 - 8x$

B)  $36x^3 + 36x^2 - 16x$

C)  $34x^2 + 37x - 16$

D)  $32x^3 + 38x^2 - 14x$

53) \_\_\_\_\_

54)  $(-5y - 2)(-8y^2 - y + 4)$

A)  $40y^3 + 21y^2 - 18y - 8$

B)  $-3y^2 - 18y - 8$

C)  $40y^3 - 18y - 8$

D)  $40y^3 + 11y^2 - 18y - 8$

54) \_\_\_\_\_

55)  $(x + 5)(x^2 - x + 8)$

A)  $x^3 + 6x^2 + 13x + 40$

B)  $x^3 + 4x^2 + 40$

C)  $x^3 + 40$

D)  $x^3 + 4x^2 + 3x + 40$

55) \_\_\_\_\_

**Factor out the greatest common factor.**

- 56)  $5x^3 + 15x$  56) \_\_\_\_\_  
A)  $5x(x^2 + 3x)$  B)  $5x^2(x + 3)$  C)  $5x(x^2 + 3)$  D)  $5x(x^2 + 10x)$
- 57)  $2x(5x - 2) + 3(5x - 2)$  57) \_\_\_\_\_  
A)  $(2x - 3)(5x + 2)$  B)  $(2x + 3)(5x - 2)$  C)  $(10x - 3)(x + 2)$  D)  $(10x + 3)(x - 2)$

**Factor the polynomial using a common factor with a negative coefficient.**

- 58)  $-2x^9 + 4x^5 - 18x^3$  58) \_\_\_\_\_  
A)  $-2x^3(x^6 + 2x^2 + 9)$  B)  $-2x^3(x^6 + 2x^2 - 9)$   
C)  $-2x^3(x^6 - 2x^2 + 9)$  D)  $-x^3(x^6 - 4x^2 + 18)$
- 59)  $-3x^2 - 24x^5 + 12x^7$  59) \_\_\_\_\_  
A)  $-3x^2(1 - 8x^3 - 4x^5)$  B)  $-3x^2(1 - 8x^3 + 4x^5)$   
C)  $-3x^2(1 + 8x^3 - 4x^5)$  D)  $-x^2(3 + 24x^3 - 12x^5)$

**Factor the trinomial completely.**

- 60)  $-p^2 + 10p - 16$  60) \_\_\_\_\_  
A)  $-(p - 8)(p + 2)$  B)  $-(p - 8)(p - 2)$  C)  $-(p + 8)(p + 2)$  D) Prime
- 61)  $-x^2 - 8x + 20$  61) \_\_\_\_\_  
A)  $-(x - 10)(x + 2)$  B)  $-(x + 10)(x - 2)$  C)  $-(x - 10)(x + 1)$  D) Prime
- 62)  $k^2 - 16k + 63$  62) \_\_\_\_\_  
A)  $(k - 9)(k - 7)$  B)  $(k - 9)(k + 7)$  C)  $(k + 9)(k - 7)$  D)  $(k + 9)(k + 7)$
- 63)  $-p^2 + 13p - 42$  63) \_\_\_\_\_  
A)  $-(p - 6)(p + 7)$  B)  $-(p + 6)(p + 7)$  C)  $-(p - 6)(p - 7)$  D) Prime
- 64)  $-x^2 - 3x + 88$  64) \_\_\_\_\_  
A)  $-(x - 11)(x + 1)$  B)  $-(x + 11)(x - 8)$  C)  $-(x - 11)(x + 8)$  D) Prime
- 65)  $16x^2 + 24x + 9$  65) \_\_\_\_\_  
A)  $(4x + 3)(4x + 3)$  B)  $(16x + 1)(x + 9)$  C)  $(16x + 3)(x + 3)$  D)  $(4x - 3)(4x - 3)$
- 66)  $6y^2 + 13y + 6$  66) \_\_\_\_\_  
A)  $(2y - 3)(3y - 2)$  B)  $(6y + 1)(y - 6)$  C)  $(6y + 3)(y + 2)$  D)  $(2y + 3)(3y + 2)$
- 67)  $20k^2 - 33k + 10$  67) \_\_\_\_\_  
A)  $(4k - 5)(5k + 2)$  B)  $(4k + 5)(5k + 2)$  C)  $(4k - 5)(5k - 2)$  D) Prime

**Factor the polynomial completely.**

- 68)  $81x^2 - 4$  68) \_\_\_\_\_  
A)  $(9x - 2)^2$  B)  $(9x + 2)^2$  C)  $(81x + 1)(x - 4)$  D)  $(9x + 2)(9x - 2)$

69)  $144k^2 - 25m^2$

A)  $(12k + 5m)(12k - 5m)$

C)  $(144k + m)(k - 25m)$

B)  $(12k - 5m)^2$

D)  $(12k + 5m)^2$

69) \_\_\_\_\_

**Find all solutions by factoring.**

70)  $m^2 - 7m + 10 = 0$

A)  $\{5, -2\}$

B)  $\{-5, 2\}$

C)  $\{-5, -2\}$

D)  $\{5, 2\}$

70) \_\_\_\_\_

71)  $x^2 + 8x + 12 = 0$

A)  $\{-2, 6\}$

B)  $\{2, 6\}$

C)  $\{2, -6\}$

D)  $\{-2, -6\}$

71) \_\_\_\_\_

72)  $x^2 + 10x - 24 = 0$

A)  $\{-12, 2\}$

B)  $\{12, 2\}$

C)  $\{12, -2\}$

D)  $\{-12, 1\}$

72) \_\_\_\_\_

73)  $2x^2 + 15x = -25$

A)  $\{-5, -10\}$

B)  $\left\{5, \frac{5}{2}\right\}$

C)  $\left\{-\frac{5}{2}, -5\right\}$

D)  $\left\{5, -\frac{5}{2}\right\}$

73) \_\_\_\_\_

74)  $25x^2 + 40x = -16$

A)  $\left\{\frac{5}{4}\right\}$

B)  $\left\{-\frac{4}{5}\right\}$

C)  $\left\{-\frac{5}{4}\right\}$

D)  $\left\{\frac{4}{5}\right\}$

74) \_\_\_\_\_

**Write with radicals. Assume that all variables represent positive real numbers.**

75)  $x^{1/7}$

A)  $x^{-7}$

B)  $\sqrt[7]{x}$

C)  $\sqrt{x^7}$

D)  $\frac{1}{\sqrt[7]{x}}$

75) \_\_\_\_\_

76)  $m^{8/3}$

A)  $\left(\sqrt[3]{m}\right)^8$

B)  $\left(\sqrt[8]{m}\right)^3$

C)  $\frac{1}{\sqrt[8]{m}}$

D)  $\sqrt[8]{m^3}$

76) \_\_\_\_\_

77)  $(x^2y^2)^{1/7}$

A)  $x^{14}y^{14}$

B)  $\left(\sqrt[2]{xy}\right)^7$

C)  $\frac{1}{\left(\sqrt[7]{xy}\right)^2}$

D)  $\left(\sqrt[7]{xy}\right)^2$

77) \_\_\_\_\_

78)  $7k^{-2/3}$

A)  $\sqrt[3]{7k^2}$

B)  $\sqrt[2]{7k^3}$

C)  $\frac{7}{\sqrt[3]{k}}$

D)  $\frac{7}{\left(\sqrt[3]{k}\right)^2}$

78) \_\_\_\_\_

79)  $2k^{4/5}$

A)  $2\left(\sqrt[5]{k}\right)^4$

B)  $\left(\sqrt[4]{k}\right)^5$

C)  $\left(\sqrt[5]{2k}\right)^4$

D)  $2\left(\sqrt[4]{k}\right)^5$

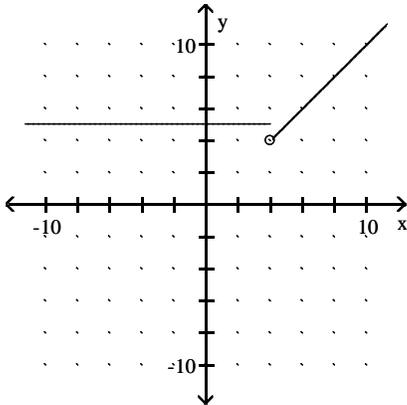
79) \_\_\_\_\_

Graph the function.

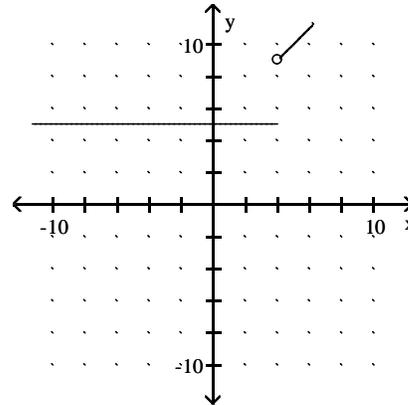
$$80) f(x) = \begin{cases} 5, & \text{for } x \leq 4, \\ x+1, & \text{for } x > 4 \end{cases}$$

80) \_\_\_\_\_

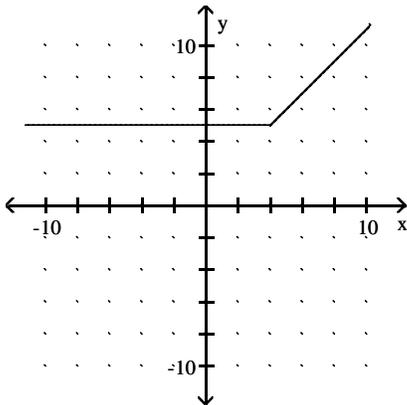
A)



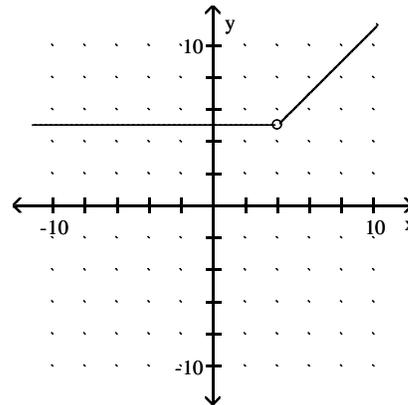
B)



C)



D)



Use the rules of exponents to simplify the expression. Write the answer with positive exponents. Assume that all variables represent positive real numbers.

81)  $x^{1/4} \cdot x^{3/4}$

81) \_\_\_\_\_

A)  $x^{3/16}$

B)  $\frac{1}{x}$

C)  $x^{3/4}$

D)  $x$

82)  $\frac{y^{9/8}}{y^{5/8}}$

82) \_\_\_\_\_

A)  $\frac{1}{y}$

B)  $y^{1/2}$

C)  $y^{9/8}$

D)  $y$

83)  $(b^5)^{7/5}$

83) \_\_\_\_\_

A)  $b^{7/25}$

B)  $b^7$

C)  $b^{12/5}$

D)  $b^{1/5}$

84)  $z^{-2/5} \cdot z^{3/5}$

84) \_\_\_\_\_

A)  $z^{6/5}$

B)  $z^{-1/5}$

C)  $z^{1/5}$

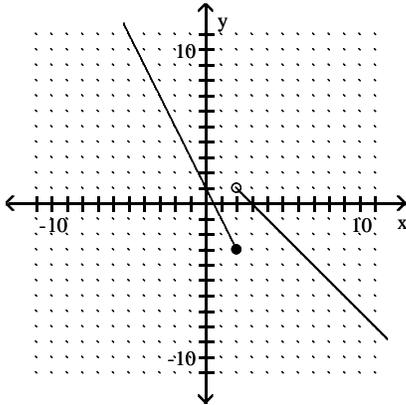
D)  $z^{5/6}$

Graph the function.

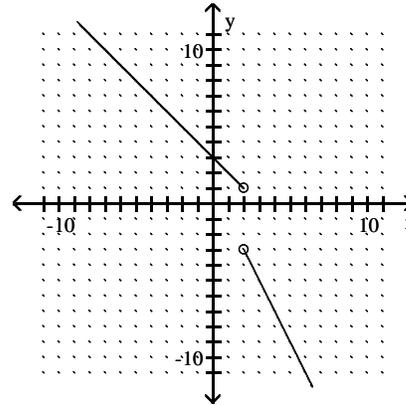
$$85) f(x) = \begin{cases} 3 - x, & \text{for } x \leq 2, \\ 1 - 2x, & \text{for } x > 2 \end{cases}$$

85) \_\_\_\_\_

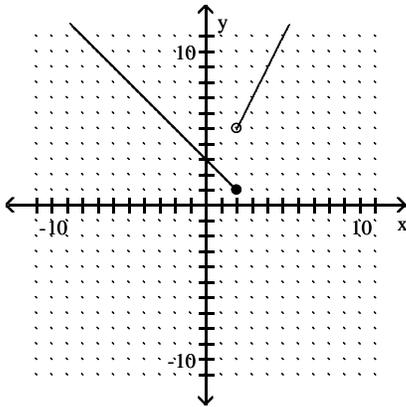
A)



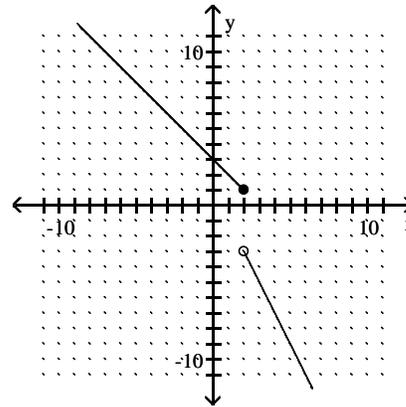
B)



C)



D)



Write the interval notation for the graph.

86)



86) \_\_\_\_\_

A)  $(-r, \infty)$

B)  $(-r, r)$

C)  $[r, \infty)$

D)  $(r, \infty)$

Evaluate the function.

87) Given  $f(x) = 3x^2 - 2x + 1$ , find  $f(k - 1)$ .

87) \_\_\_\_\_

A)  $-8k^2 + 3k + 6$

B)  $3k^2 - 8k + 6$

C)  $3k^2 + 1k + 2$

D)  $3k^2 - 8k + 2$

88) Given  $f(x) = \frac{4x}{3x - 4}$ , find  $f(-3)$ .

88) \_\_\_\_\_

A)  $-4$

B)  $3$

C)  $\frac{12}{13}$

D)  $\frac{4}{3}$

89) For  $f(x) = x^2 + 5x$ , find  $\frac{f(x+h) - f(x)}{h}$ .

89) \_\_\_\_\_

A)  $x$

B)  $2xh + h + 5h$

C)  $2x + h + 5$

D)  $2x + h - 5$

90) For  $f(x) = \begin{cases} 3x + 2, & \text{for } x < 2 \\ 11, & \text{for } x = 2 \\ x^2 + 4, & \text{for } x > 2 \end{cases}$ , find  $f(-1)$  and  $f(6)$ . 90) \_\_\_\_\_

A)  $f(-1) = -5, f(6) = 40$                       B)  $f(-1) = 5, f(6) = 20$   
 C)  $f(-1) = -1, f(6) = 40$                       D)  $f(-1) = -1, f(6) = 16$

91) For  $f(x) = \begin{cases} -5x - 1, & \text{for } x < 0 \\ 14, & \text{for } 0 \leq x \leq 3 \\ \frac{1}{3}x + 3, & \text{for } x > 3 \end{cases}$ , find  $f(0)$  and  $f(12)$ . 91) \_\_\_\_\_

A)  $f(0) = -1, f(12) = 7$                       B)  $f(0) = 14, f(12) = 9$   
 C)  $f(0) = 14, f(12) = 7$                       D)  $f(0) = -1, f(12) = 9$

Compute and simplify the difference quotient  $\frac{f(x+h) - f(x)}{h}$ ,  $h \neq 0$ .

92)  $f(x) = 5x^2 + 7x$  92) \_\_\_\_\_

A)  $10x^2 + 5h + 7x$                       B)  $10x + 5h + 7$                       C)  $15x - 7h + 14$                       D)  $10x + 7$

Find the function value.

93) Given that  $f(x) = 5x^2 - 2x$ , find  $f(t + 2)$ . 93) \_\_\_\_\_

A)  $t^2 + 2t - 6$                       B)  $3t + 6$                       C)  $5t^2 - 18t + 16$                       D)  $5t^2 + 18t + 16$

Solve the problem.

94) Find  $f(k - 1)$  when  $f(x) = 2x^2 - 4x - 4$ . 94) \_\_\_\_\_

A)  $-8k^2 + 2k + 2$                       B)  $2k^2 - 8k - 6$                       C)  $2k^2 - 8k + 2$                       D)  $2k^2 - 12k - 6$

95) Find  $f(k)$  when  $f(x) = 3x^2 + 4x + 5$ . 95) \_\_\_\_\_

A)  $9k^2 + 16k + 25$                       B)  $3k^2 + 4k + 5$                       C)  $3k^2 + 16k + 5$                       D)  $3k^2 + 4k + 25$

96) Find  $g(a + 1)$  when  $g(x) = \frac{1}{4}x + 5$ . 96) \_\_\_\_\_

A)  $\frac{a - 21}{4}$                       B)  $\frac{1}{4}a + 5$                       C)  $\frac{a + 21}{4}$                       D)  $\frac{1}{4}a - 4$

97) Find  $g(a + 1)$  when  $g(x) = 3x + 2$ . 97) \_\_\_\_\_

A)  $3a - 1$                       B)  $\frac{1}{3}a + 2$                       C)  $3a + 2$                       D)  $3a + 5$

Evaluate the function.

98) Find  $f(0)$  if  $f = \{(-2, 3), (3, 0), (0, 5), (5, -2)\}$  98) \_\_\_\_\_

A)  $(5, 3)$                       B) None of these                      C) 5                      D) 3

Solve the problem.

99) Find  $f\left(\frac{1}{3}\right)$  if  $f(x) = -5x^2 + 5x + 7$ . 99) \_\_\_\_\_

A)  $\frac{73}{9}$                       B)  $-\frac{7}{9}$                       C)  $-\frac{73}{9}$                       D)  $\frac{7}{9}$