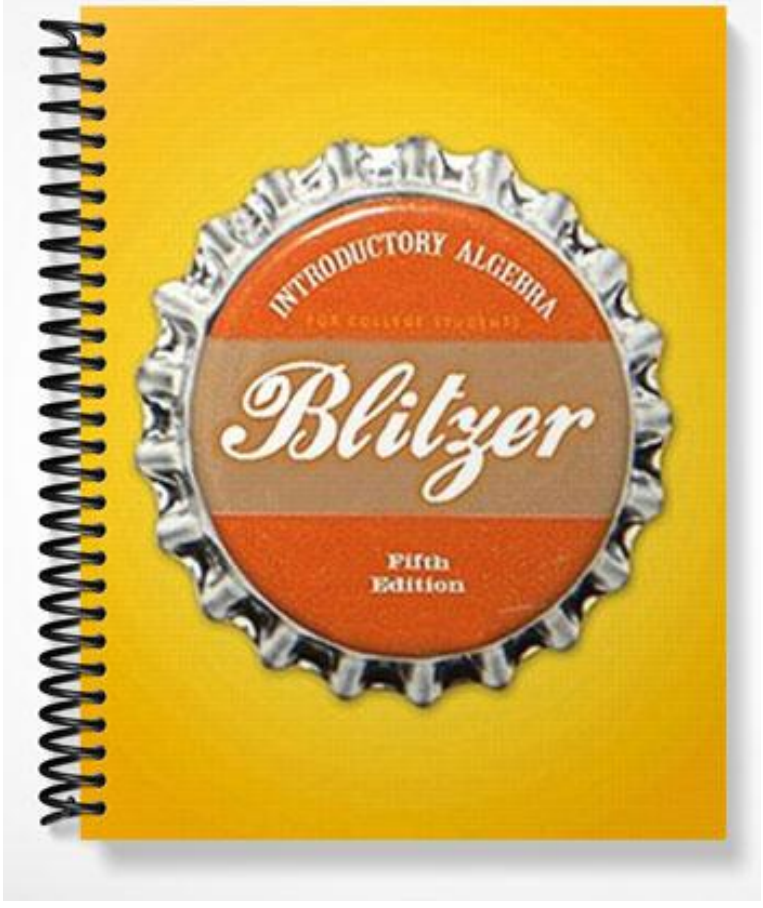
TEST BANK



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

Determine whether the equation in one variable is linear.

1) $x - 9 = 5$ 1) _____

A) linear B) not linear

2) $x^2 - 3 = 3$ 2) _____

A) linear B) not linear

3) $\frac{2}{x} = 8$ 3) _____

A) linear B) not linear

4) $3x + 19 = 2$ 4) _____

A) linear B) not linear

5) $\frac{x}{10} + 7 = 4$ 5) _____

A) linear B) not linear

6) $\sqrt{2}x + \pi = 0.\overline{6}$ 6) _____

A) linear B) not linear

7) $4\sqrt{x} - 11 = 0$ 7) _____

A) linear B) not linear

8) $67.6x = 6.0$ 8) _____

A) linear B) not linear

9) $7(x - 3) = 0$ 9) _____

A) linear B) not linear

10) $|x + 9| = 14$ 10) _____

A) linear B) not linear

11) $|13x| - 19 = 17$ 11) _____

A) linear B) not linear

12) $3x = 4^{x^3}$ 12) _____

A) linear B) not linear

Solve the equation.

13) $a - 10 = -9$ 13) _____

A) {19} B) {-1} C) {1} D) {-19}

14) $x + 3 = -14$ 14) _____

A) {-17} B) { 17} C) {-11} D) { 11}

15) $x + 12 = 3$ 15) _____

A) { 15} B) {-9} C) { 9} D) {-15}

16) -19 = b - 10 16) _____
A) {29} B) {9} C) {-9} D) {-29}

17) -11 = b - 15 17) _____
A) {26} B) {-4} C) {-26} D) {4}

18) -3 + z = 12 18) _____
A) {9} B) {-9} C) {-15} D) {15}

19) $\frac{1}{4}$ + x = 6 19) _____
A) { 23} B) $\left\{\frac{25}{4}\right\}$ C) $\left\{\frac{5}{4}\right\}$ D) $\left\{\frac{23}{4}\right\}$

20) x + $\frac{1}{8}$ = $\frac{7}{8}$ 20) _____
A) $\left\{\frac{5}{8}\right\}$ B) $\left\{\frac{6}{7}\right\}$ C) $\left\{\frac{3}{4}\right\}$ D) {1}

21) x + $\frac{1}{4}$ = -$\frac{3}{8}$ 21) _____
A) $\left\{-\frac{21}{32}\right\}$ B) $\left\{-\frac{1}{2}\right\}$ C) $\left\{-\frac{5}{8}\right\}$ D) $\left\{-\frac{1}{3}\right\}$

22) x - $\frac{2}{5}$ = $\frac{2}{15}$ 22) _____
A) $\left\{-\frac{41}{75}\right\}$ B) $\left\{\frac{8}{15}\right\}$ C) $\left\{-\frac{8}{15}\right\}$ D) $\left\{-\frac{4}{15}\right\}$

23) -$\frac{1}{6}$ + z = $\frac{3}{8}$ 23) _____
A) $\left\{\frac{1}{2}\right\}$ B) $\left\{-\frac{13}{24}\right\}$ C) $\left\{\frac{2}{7}\right\}$ D) $\left\{\frac{13}{24}\right\}$

24) -4.1 + x = 20.4 24) _____
A) {15.8} B) {16.3} C) {24.5} D) {24}

25) -23.3 - a = 19.1 25) _____
A) {-4.2} B) {-42.4} C) {42.4} D) {4.2}

26) 5 + 2p = 3p 26) _____
A) {-5} B) {0} C) {2} D) {5}

27) 6y = 5y - 8.6 27) _____
A) {6} B) {-19.6} C) {-8.6} D) {8.6}

28) 12x - 6 = 8x + 30 28) _____
A) { 9} B) { 12} C) { 10} D) { 7}

29) $15x - 2 - 6x = 43$ 29) _____

A) { 3} B) { 8} C) { 5} D) { 6}

30) $3(y + 7) = 4(y - 3)$ 30) _____

A) {33} B) {-9} C) {9} D) {-33}

31) $5(2z - 5) = 9(z + 4)$ 31) _____

A) {-11} B) {11} C) {61} D) {16}

32) $10y = 3y + 6 + 6y$ 32) _____

A) {-6} B) {6} C) {60} D) {-60}

33) $-5a + 2 + 6a = 15 - 21$ 33) _____

A) {38} B) {-38} C) {-8} D) {8}

34) $-6b + 5 + 4b = -3b + 10$ 34) _____

A) {-10} B) {10} C) {-5} D) {5}

35) $-8.8 + 3x - 6.6 + 2x - 2.8 = 5.6 + 6x + 1.3$ 35) _____

A) {-11.3} B) {-25.1} C) {11.3} D) {25.1}

Use the given information to write an equation. Let x represent the number described in the exercise. Then solve the equation and find the number.

36) The sum of a number and forty-four is fifty. 36) _____

A) x - 44 = 50; 94 B) x + 44 = 50; 6

C) 44x = 50; 1.14 D) x ÷ 44 = 50; 2200

37) Twenty-nine increased by a number equals fifty-two. 37) _____

A) 29 + 52 = x; 81 B) 29 + x = 52; 23

C) 29 - x = 52; -23 D) 29x = 52; 1.79

38) If 255 is subtracted from a number, the result is 443. 38) _____

A) x + 255 = 443; 188 B) x - 255 = 443; -698

C) x + 443 = 255; -188 D) x - 255 = 443; 698

39) If 285 is added to a number, the result is 647. 39) _____

A) 285 + x = 647; -932 B) x - 285 = 647; 932

C) x + 285 = 647; -362 D) 285 + x = 647; 362

Solve.

40) The cost of having a car towed is given by the formula C = 2x + 80, where C is in dollars and x is the number of miles the car is towed. Find the cost of having a car towed 15 miles. 40) _____

A) $ 100 B) $110 C) $ 82 D) $ 30

41) The monthly cost of a certain long distance service is given by the formula $C = 0.05t + 4.95$ where C is in dollars and t is the amount of time in minutes called in a month. Find the cost of calling long distance for 130 minutes in a month. 41) _____

A) $ 10.45 B) $ 11.45 C) $ 6.50 D) $ 17.95

42) The amount of water in a leaky bucket is given by the formula $f = 121 - 9t$, where f is in ounces and t is in minutes. Find the amount of water in the bucket after 5 minutes. 42) _____

A) 112 oz B) 76 oz C) 166 oz D) 45 oz

43) The altitude above sea level of an airplane just after taking off from an airport on a high plateau is given by the formula $h = 1000t + 3735$, where h is in feet and t is the time in minutes since take-off. Find the altitude of the airplane after 5 minutes. 43) _____

A) 5000 ft B) 8635 ft C) 8735 ft D) 8835 ft

Solve the equation using the multiplication property of equality.

44) $-\frac{1}{3}a = 0$ 44) _____

A) {3} B) {0} C) {1} D) {-3}

45) $\frac{n}{4} = 6$ 45) _____

A) {1} B) {9} C) {24} D) {10}

46) $-\frac{n}{2} = -12$ 46) _____

A) {-24} B) {14} C) {24} D) {-14}

47) $\frac{v}{-3} = 6$ 47) _____

A) {-9} B) {18} C) {9} D) {-18}

48) $5x = 45$ 48) _____

A) {9} B) $\left\{\frac{1}{9}\right\}$ C) {40} D) {225}

49) $5x = 0$ 49) _____

A) {5} B) {1} C) {-5} D) {0}

50) $9a = -36$ 50) _____

A) {1} B) {-4} C) {45} D) {-45}

51) $-5x = -35$ 51) _____

A) {30} B) {2} C) {-30} D) {7}

52) $-49x = 21$ 52) _____

A) $\left\{-\frac{3}{7}\right\}$ B) $\left\{-\frac{7}{3}\right\}$ C) $\left\{\frac{7}{3}\right\}$ D) $\left\{\frac{3}{7}\right\}$

53) $-\frac{1}{3}x = 6$ 53) _____

A) {-18} B) {3} C) {2} D) {-2}

54) 16 =

54) $-\frac{4}{5}x$ ___ ___

A) $\left\{-\frac{76}{5}\right\}$ B) {- 20} C) $\left\{-\frac{64}{5}\right\}$ D) $\left\{-\frac{84}{5}\right\}$

55) $\frac{2}{3}x = 10$ 55) _____

A) $\left\{\frac{20}{3}\right\}$ B) { 15} C) $\left\{\frac{32}{3}\right\}$ D) $\left\{\frac{28}{3}\right\}$

56) $-\frac{2}{3}y = \frac{1}{5}$ 56) _____

A) $\left\{-\frac{10}{3}\right\}$ B) $\left\{-\frac{3}{10}\right\}$ C) $\left\{\frac{3}{10}\right\}$ D) $\left\{\frac{3}{5}\right\}$

57) 6x + x = 28 57) _____

A) $\left\{\frac{14}{3}\right\}$ B) {4} C) $\left\{\frac{29}{6}\right\}$ D) {3}

58) -4x + x = -27 58) _____

A) {-10} B) {9} C) {-9} D) {10}

59) 2x + 20x = 16 59) _____

A) $\left\{\frac{11}{8}\right\}$ B) $\left\{\frac{8}{11}\right\}$ C) {-6} D) {352}

Solve the equation.

60) -x = -5 60) _____

A) {5} B) {-1} C) {0} D) {-5}

61) -x = -2 61) _____

A) { 2} B) {-1} C) { -2} D) {0}

Solve the equation using both the addition and multiplication properties of equality.

62) 5r + 6 = 21 62) _____

A) {10} B) {1} C) {14} D) {3}

63) 10n - 10 = 90 63) _____

A) {94} B) {10} C) {19} D) {90}

64) -16 = 8x - 8 64) _____

A) {-16} B) {-12} C) {-1} D) {6}

65) 76 = -9x - 5 65) _____

A) {90} B) {94} C) {-9} D) {3}

66) -5x - 19 = -74 66) _____

A) {11} B) {-11} C) $\left\{\frac{93}{5}\right\}$ D) {-50}

67) -44 = -5x + 6 67) _____

A) {10} B) {49} C) {-10} D) {45}

68) -5x = 36 + 7x 68) _____
A) {-2} B) {48} C) {3} D) {-3}

69) 8y + 6 = 6y 69) _____
A) {-3} B) {3} C) $\left\{\frac{3}{7}\right\}$ D) $\left\{-\frac{3}{7}\right\}$

70) -8y - 36 = -2y 70) _____
A) {-6} B) $\left\{-\frac{18}{5}\right\}$ C) $\left\{\frac{18}{5}\right\}$ D) { 6}

71) 16x - 6 = 4x + 90 71) _____
A) { 6} B) { 8} C) { 11} D) { 9}

72) -3y + 2 = -2 + 6y 72) _____
A) $\left\{-\frac{9}{4}\right\}$ B) $\left\{\frac{4}{9}\right\}$ C) $\left\{\frac{3}{0}\right\}$ D) $\left\{\frac{9}{4}\right\}$

73) 9x - 2 = 22 - 3x 73) _____
A) {2} B) $\left\{\frac{10}{3}\right\}$ C) {-2} D) {4}

74) -7x - 5x - 6 = 2x 74) _____
A) $\left\{\frac{3}{7}\right\}$ B) $\left\{\frac{3}{5}\right\}$ C) $\left\{\frac{7}{3}\right\}$ D) $\left\{-\frac{3}{7}\right\}$

Use the given information to write an equation. Let x represent the number described in the exercise. Then solve the equation and find the number.

75) The product of three-fourths and a number is six. 75) _____
A) $\frac{3}{4}$ - x = 6; $\frac{-21}{4}$ B) $\frac{3}{4}$ x = 6; 8
C) $\frac{3}{4}$ + x = 6; $\frac{21}{4}$ D) $\frac{3}{4}$ = 6x; $\frac{1}{8}$

76) If thirty is divided by a number, the result is five. 76) _____
A) $\frac{30}{x}$ = 5; 6 B) $\frac{x}{30}$ = 5; 150
C) $\frac{30}{5}$ = x; 6 D) 30 - x = 5; 25

77) A number subtracted from eighteen is four. 77) _____
A) 18 + x = 4; -14 B) 18 - x = 4; 14
C) x - 18 = 4; 22 D) 18 - 4 = x; 14

Solve the problem.

78) The time it takes to travel a given distance at constant speed is given by the formula $t = \frac{d}{r}$, where t is the time, d is the distance, and r is the rate of travel. At 50 miles per

hour, what distance can be traveled in 3 hours?

78) ___ ___

A) 150 mi B) 300 mi C) 75 mi D) 30 mi

79) The time it takes to travel a given distance at constant speed is given by the formula $t = \frac{d}{r}$, where t is the time, d is the distance, and r is the rate of travel. At 0.5 mile per minute, what distance can be traveled in 30 minutes? 79) _____

A) 7.5 mi B) 3 mi C) 30 mi D) 15 mi

80) To convert meters to feet, you can use the formula $f = \frac{m}{0.3038}$, where f is the distance in feet and m is the distance in meters. How many meters (to the nearest tenth) is 8 feet? 80) _____

A) 26.3 m B) 2.4 m C) 24.3 m D) 2.6 m

81) Power is the time rate of doing work and is commonly measured in watts. Power is given by the formula $P = \frac{W}{t}$, where P is power, W is work (in joules), and t is time in seconds. If 700 watts of power are used in 4 seconds, how much work (in joules) was done? 81) _____

A) 280 joules B) 175 joules
C) 2800 joules D) 18 joules

82) The speed of a ball dropped from a tower is given by the formula f = 32t where f is in feet per second and t is the number of seconds since the ball was dropped. Find the speed of the ball after 11 seconds. 82) _____

A) 352 ft/sec B) 342 ft/sec
C) 32 ft/sec D) 11 ft/sec

83) The formula C = 522x + 133 models the data for the cost to produce x units of a product, where C is given in dollars. How many units can be produced for a cost of $104,533? 83) _____

A) 150 units B) 200 units C) 100 units D) 400 units

84) The weekly production cost C of manufacturing x calendars is given by $C = 25 + 3x$, where the variable C is in dollars. What is the cost of producing 279 calendars? 84) _____

A) $837.00 B) $862.00 C) $6978.00 D) $304.00

1) A
2) B
3) B
4) A
5) A
6) A
7) B
8) A
9) A
10) B
11) B
12) B
13) C
14) A
15) B
16) C
17) D
18) D
19) D
20) C
21) C
22) B
23) D
24) C
25) B
26) D
27) C
28) A
29) C
30) A
31) C
32) B
33) C
34) D
35) B
36) B
37) B
38) D
39) D
40) B
41) B
42) B
43) C
44) B
45) C
46) C
47) D
48) A
49) D
50) B
51) D

52) A
53) A
54) B
55) B
56) B
57) B
58) B
59) B
60) A
61) A
62) D
63) B
64) C
65) C
66) A
67) A
68) D
69) A
70) A
71) B
72) B
73) A
74) D
75) B
76) A
77) B
78) A
79) D
80) B
81) C
82) A
83) B
84) B