INTRODUCTORY ALGEBRA/GRACEY
CHAPTER 1-2 PRACTICE Name_____

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

Evaluate the algebraic expression for the given value(s).

1) $x + 9$, given $x = 4$ 1) _____
A) 5 B) 14 C) 13 D) 36

2) $\frac{15}{x}$, given $x = 5$ 2) _____
A) 3 B) 15 C) 4 D) 10

3) $\frac{2y - x + 20}{2x - y}$, given $x = 5, y = 3$ 3) _____
A) 3 B) $\frac{5}{3}$ C) 21 D) 1

Write the English phrase as an algebraic expression. Let the variable x represent the number.

4) seven less than a number 4) _____
A) $x - 7$ B) $\frac{x}{7}$ C) $7 - x$ D) $x + 7$

5) Five times a number, decreased by fifteen 5) _____
A) $5x + 15$ B) $5x - 15$ C) $15 - 5x$ D) $5x - 75$

6) six more than the quotient of a number and 40 6) _____
A) $\frac{40}{x} + 6$ B) $\frac{x}{40} + 6$ C) $40x + 6$ D) $40x - 6$

Determine if the given value is a solution to the equation.

7) $x + 7 = 16$; 9 7) _____
A) solution B) not a solution

8) $\frac{r}{4} = 5$; 25 8) _____
A) not a solution B) solution

9) $4(p - 1) = 2p$; 2 9) _____
A) not a solution B) solution

Write the sentence as an equation. Let the variable x represent the number.

10) Two times a number is 16. 10) _____
A) $x + 2 = 16$ B) $2x = 16$ C) $\frac{2}{x} = 16$ D) $x - 2 = 16$

11) The sum of twice a number and 6 is 12. 11) _____
A) $x + 12 = 12$ B) $2x + 6 = 12$ C) $12x = 12$ D) $2x - 6 = 12$

12) Five times a number is equal to 30 decreased by the number. 12) _____

A) $5x = 30 + x$ B) $5x = x - 30$ C) $5 + x = 30 - x$ D) $5x = 30 - x$

Solve.

13) Find the perimeter of a rectangle if the length, L, is 6 meters and the width, W, is 3 meters. Use the formula $P = 2L + 2W$. 13) _____

A) 18 m B) 15 m C) 9 m D) 36 m

14) The formula $P = C + 0.2C$ gives the price P of jewelry after a 20% mark-up on the original cost C paid by the jeweler. If the jeweler pays \$231 for a piece of jewelry, what is the price after mark-up? 14) _____

A) \$277.20 B) \$2541.00 C) \$184.80 D) \$235.62

Convert the mixed number to an improper fraction.

15) $2\frac{7}{9}$ 15) _____

A) $\frac{25}{9}$ B) $\frac{18}{9}$ C) $\frac{18}{7}$ D) $\frac{25}{7}$

16) $5\frac{2}{5}$ 16) _____

A) $\frac{27}{2}$ B) $\frac{25}{2}$ C) $\frac{27}{5}$ D) $\frac{25}{5}$

Convert the improper fraction to a mixed number.

17) $\frac{19}{3}$ 17) _____

A) $7\frac{1}{3}$ B) $6\frac{1}{3}$ C) $\frac{1}{3}$ D) $5\frac{1}{7}$

18) $\frac{27}{7}$ 18) _____

A) $27\frac{27}{7}$ B) $\frac{7}{27}$ C) $3\frac{6}{7}$ D) $27\frac{7}{27}$

Identify the natural number as prime or composite. If the number is composite, find its prime factorization.

19) 29 19) _____

A) $2 \cdot 3 \cdot 5$ B) $2 \cdot 13$ C) $2 \cdot 2 \cdot 7$ D) prime

20) 126 20) _____

A) $2 \cdot 2 \cdot 3 \cdot 7$ B) $2 \cdot 3 \cdot 7$ C) $2 \cdot 3 \cdot 3 \cdot 7$ D) prime

21) 609 21) _____

A) $7 \cdot 7 \cdot 29$ B) $3 \cdot 3 \cdot 29$ C) $3 \cdot 7 \cdot 29$ D) prime

Write the fraction in lowest terms.

22) $\frac{32}{56}$ 22) _____

A) $\frac{8}{7}$ B) $\frac{4}{7}$ C) $\frac{32}{56}$ D) $\frac{4}{8}$

23) $\frac{140}{180}$ 23) _____

A) $\frac{20}{9}$ B) $\frac{7}{20}$ C) $\frac{7}{9}$ D) $\frac{140}{180}$

Perform the indicated operation. Where possible, reduce the answer to its lowest terms.

24) $\frac{1}{4} \cdot \frac{5}{7}$ 24) _____

A) $\frac{6}{11}$ B) $\frac{28}{5}$ C) $\frac{20}{7}$ D) $\frac{5}{28}$

25) $\frac{10}{8} \cdot \frac{7}{25}$ 25) _____

A) $\frac{125}{28}$ B) $\frac{17}{33}$ C) $\frac{7}{20}$ D) $\frac{7}{3}$

26) $200 \cdot \frac{2}{5}$ 26) _____

A) $\frac{40002}{5}$ B) 80 C) 100 D) $\frac{400}{5}$

27) $\left(1\frac{2}{3}\right)\left(2\frac{2}{5}\right)$ 27) _____

A) 12 B) 5 C) $2\frac{23}{15}$ D) 4

28) $\frac{6}{11} \div \frac{3}{14}$ 28) _____

A) $\frac{154}{9}$ B) $\frac{9}{25}$ C) $\frac{28}{11}$ D) $\frac{9}{154}$

29) $\frac{1}{15} \div \frac{3}{10}$ 29) _____

A) $\frac{2}{7}$ B) $\frac{2}{9}$ C) 0 D) $\frac{1}{9}$

30) $3\frac{7}{9} \div 1\frac{5}{7}$ 30) _____

A) $2\frac{12}{54}$ B) $2\frac{11}{53}$ C) $3\frac{11}{54}$ D) $2\frac{11}{54}$

31) $\frac{25}{42} - \frac{7}{42}$ 31) _____

A) $\frac{16}{21}$ B) $\frac{2}{3}$ C) $\frac{2}{7}$ D) $\frac{3}{7}$

32) $\frac{1}{5} - \frac{1}{11}$ 32) _____

A) $\frac{6}{55}$ B) $\frac{1}{55}$ C) $\frac{6}{5}$ D) $\frac{1}{5}$

33) $\frac{7}{9} - \frac{1}{12}$ 33) _____

A) $\frac{1}{2}$ B) $\frac{2}{3}$ C) $\frac{25}{36}$ D) $\frac{13}{18}$

34) $7\frac{3}{4} + 8\frac{1}{5}$ 34) _____

A) $14\frac{19}{20}$ B) $15\frac{19}{20}$ C) $16\frac{19}{20}$ D) $7\frac{19}{20}$

Determine if the given value is a solution to the equation.

35) $\frac{1}{2}x = 4;\ 8$ 35) _____

A) solution B) not a solution

Translate from English to an algebraic expression or equation, whichever is appropriate. Let the variable x represent the number.

36) The product of $\frac{4}{5}$ and a number, decreased by 7, is 5 more than the number. 36) _____

A) $\frac{4}{5}x - 7 = x + 5$ B) $\frac{4}{5}x - 7 = x - 5$ C) $\frac{4}{5}x - 7 + x = 5$ D) $\frac{4}{5}x + 7 = x + 5$

Solve the problem.

37) Use the formula $F = \frac{9}{5}C + 32$ to convert 135°C to degrees Fahrenheit. 37) _____

A) 93.4°F B) 211°F C) 57.8°F D) 275°F

Write a positive or negative integer that describes the situation.

38) 181 feet above sea level 38) _____

A) -181 B) 181

39) $1338 in debt 39) _____

A) -1338 B) 1338

40) The team gave up 6 points. 40) _____

A) -6 B) 6

Determine whether natural numbers, whole numbers, integers, rational numbers, or all real numbers are appropriate for the situation.

41) heights of WNBA players 41) _____

A) whole numbers B) integers

C) rational numbers D) all real numbers

42) the number of dogs a person owns 42) _____

A) natural numbers B) whole numbers

C) all real numbers D) integers

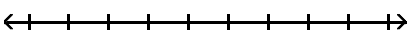
43) values of A given by the formula $A = \pi r^2$, where A is the area of a circle with radius r 43) _____

A) whole numbers B) rational numbers

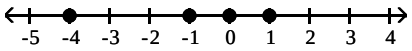
C) all real numbers D) integers

Graph the numbers on a number line.

44) -4, -2, 0, 2 44) _____



A)



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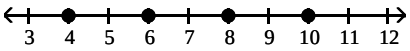

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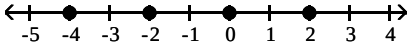

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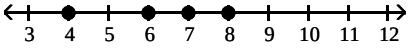
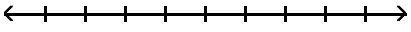
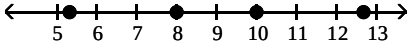


45) $-3\frac{2}{3}, -1, 1, 3\frac{2}{3}$ 45) _____



A)



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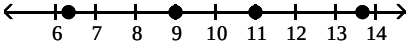
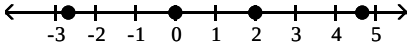


C)



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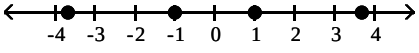


Express the rational number as a decimal.

46) $\frac{9}{10}$ 46) _____

A) 0.9 B) 9 C) 1.111 D) 0.09

47) $\frac{4}{15}$ 47) _____

A) $0.2\overline{6}$ B) 0.26 C) $0.\overline{26}$ D) $0.\overline{266}$

List all the elements of B that are elements of the given set.

48) $B = \{11, \sqrt{5}, -17, 0, \frac{0}{8}, \sqrt{4}\}$ Integers 48) _____

A) $11, -17, 0, \frac{0}{8}, \sqrt{4}$ B) $11, 0, \sqrt{4}$

C) 11, 0 D) 11, -17, 0

49) $B = \{17, \sqrt{6}, -16, 0, \frac{0}{2}, \sqrt{16}, \frac{-4}{0}, 0.65\}$ Rational numbers 49) _____

A) $17, -16, 0, \frac{0}{2}, \sqrt{16}, 0.65$ B) $\sqrt{6}, \frac{0}{2}, 0.65$

C) $\sqrt{6}, \sqrt{16}$ D) $17, 0, \sqrt{16}$

50) $B = \{20, \sqrt{8}, -4, 0, \frac{0}{5}, \sqrt{16}, \frac{-6}{0}, 0.31\}$ Irrational numbers 50) _____

A) $\sqrt{8}, \sqrt{16}$ B) $\sqrt{8}$ C) $\sqrt{8}, \frac{-6}{0}$ D) $\sqrt{8}, \sqrt{16}, 0.31$

Insert either < or > in the area between the pair of numbers to make a true statement.

51) $-9 \_\_\_\_ -2$ 51) _____

A) > B) <

52) $-\frac{11}{13} \_\_\_\_ -\frac{8}{15}$ 52) _____

A) > B) <

53) $|-3| \_\_\_\_\_ |-20|$ 53) _____

A) = B) < C) >

Determine whether the inequality is true or false.

54) $-15 \le 18$ 54) _____

A) True B) False

Find the absolute value.

55) $|\sqrt{14}|$ 55) _____

A) $\sqrt{-14}$ B) $\sqrt{14}$ C) 0 D) $-\sqrt{14}$

56) $\left| -\frac{2}{3} \right|$ 56) _____

A) 0 B) $\frac{3}{2}$ C) $\frac{2}{3}$ D) $-\frac{2}{3}$

An algebraic expression is given. Use the expression to answer the following questions.

a) How many terms are there in the algebraic expression?

b) What is the numerical coefficient of the first term?

c) What is the constant term?

d) Does the algebraic expression contain like terms? If so, what are the like terms?

57) $x + 9 + 5x$ 57) _____

A) a) 3
b) 5
c) 9
d) yes, x and 5x

B) a) 3
b) 1
c) 9
d) no

C) a) 3
b) 1
c) 9
d) yes, x and 5x

D) a) 2
b) 1
c) 9
d) yes, x and 5x

Use the commutative property of addition to write an equivalent algebraic expression.

58) $2(x + 7)$ 58) _____

A) $2(x + 7)$ B) $2(7 + x)$ C) $7(x + 2)$ D) $(x + 7)2$

Use the commutative property of multiplication to write an equivalent algebraic expression.

59) $x + y4$ 59) _____

A) $x4 + y$ B) $y4 + x$ C) $x + 4y$ D) $4y + x$

Use an associative property to rewrite the algebraic expression. Once grouping has been changed, simplify the resulting algebraic expression.

60) $3 + (8 + x)$ 60) _____

A) $(3 + 8) + x;\ 11$
B) $3 + (8 + x);\ 3 + 8x$
C) $(3 + 8) + x;\ 11x$
D) $(3 + 8) + x;\ 11 + x$

Use the distributive property to rewrite the algebraic expression without parentheses. Simplify.

61) $9(x + 8)$ 61) _____

A) $9x + 8$ B) $x + 72$ C) $9x + 72$ D) $9x + 17$

62) $\frac{1}{2}(6x + 4)$ 62) _____

A) $3x + 4$ B) $12x + 8$ C) x D) $3x + 2$

63) $5(2x + 8 + 3y)$ 63) _____

A) $10x + 40 + 15y$ B) $10x + 8 + 15y$ C) $10x + 8 + 3y$ D) $10x + 40 + 3y$

Simplify the algebraic expression.

64) $4x + 6x$ 64) _____

A) $2x$ B) $-2x$ C) $10x$ D) $10x^2$

65) $8a + 2 - 6a$ 65) _____

A) $-2a + 2$ B) $4a$ C) $14a + 2$ D) $2a + 2$

66) $6y + 8 - 3y + 1$ 66) _____

A) $9y + 9$ B) $12y$ C) $3y + 7$ D) $3y + 9$

67) $4 + (x + 4)$ 67) _____

A) $x + 8$ B) $4x + 16$ C) $x + 16$ D) $8x$

68) $17 + 4(3x - 2)$ 68) _____

A) $12x + 9$ B) $12x + 15$ C) $12x - 9$ D) $3x + 9$

Write the English phrase as an algebraic expression, then simplify the expression. Let x represent the number.

69) seven times the product of 5 and a number. 69) _____

A) $7 + 5x$; $12x$ B) $7(x + 5)$; $7x + 5$ C) $7\left(\frac{x}{5}\right)$; $\frac{7}{5}x$ D) $7(5x)$; $35x$

70) ten increased by the product of 2 and two less than a number. 70) _____

A) $10 + 2(2 - x)$; $2x + 14$ B) $10 + 2(x + 2)$; $2x + 14$

C) $10 + 2(x - 2)$; $2x + 6$ D) $10 + x - 4$; $x + 6$

Simplify the algebraic expression.

71) $9y + (-7y)$ 71) _____

A) $16y$ B) $-2y$ C) $2y$ D) $-16y$

72) $-2 + 4x + 1 + (-7x)$ 72) _____

A) $3x - 1$ B) $-3x - 1$ C) $-11x - 1$ D) $-3x + 1$

73) $10(6 - 5a) + 3(10a - 6)$ 73) _____

A) $20a + 42$ B) $-20a - 42$ C) $-20a + 42$ D) $20a - 42$

Solve.

74) The temperature at 1 p.m. on January 13 was -12°F. By 8 p.m. the temperature had risen 25 degrees. Find the temperature at 8 p.m. 74) _____

A) 13°F B) -37°F C) -13°F D) 37°F

75) A deep-sea diver dives from the surface to 171 meters below the surface and then swims up 8 meters, down 17 meters, down another 29 meters, and then up 25 meters. Find the diver's depth after these movements. 75) _____

A) 184 meters below the surface B) 92 meters below the surface

C) 200 meters below the surface D) 126 meters below the surface

Perform the indicated subtraction.

76) $10 - 15$ 76) _____

A) 5 B) -25 C) -5 D) 25

77) $10 - (-29)$ 77) _____

A) -39 B) 19 C) -19 D) 39

78) $-7 - (-7)$ 78) _____

A) -14 B) 14 C) 0 D) 1

79) $0 - (-13)$ 79) _____

A) 1 B) 13 C) 0 D) -13

80) $2.7 - (-0.4)$ 80) _____

A) 3.1 B) -3.1 C) 2.3 D) -2.3

Simplify the series of additions and subtractions.

81) -6 - 13 - (-8) + (-12) 81) _____

A) 27 B) 1 C) 3 D) -23

82) $\frac{9}{4} - \frac{3}{8} - \frac{9}{8}$ 82) _____

A) $-\frac{3}{4}$ B) $\frac{3}{4}$ C) $\frac{18}{24}$ D) $\frac{1}{4}$

83) 8.7 - 7.7 - 15.4 83) _____

A) 16.4 B) -14.4 C) 31.8 D) 1

Identify the terms in the algebraic expression.

84) -4x + 5xy - y 84) _____

A) 4x, 5xy, y B) -4x, 5xy, -y C) -4x, 5xy D) -4x, 5xy, y

85) 6a - 2ab - 4 85) _____

A) 6a, -2ab, -4 B) 6a, -2ab C) 6a, 2ab, -4 D) 6a, -2ab, 4

Simplify the algebraic expression.

86) 7 - 4y - 10 - 7y 86) _____

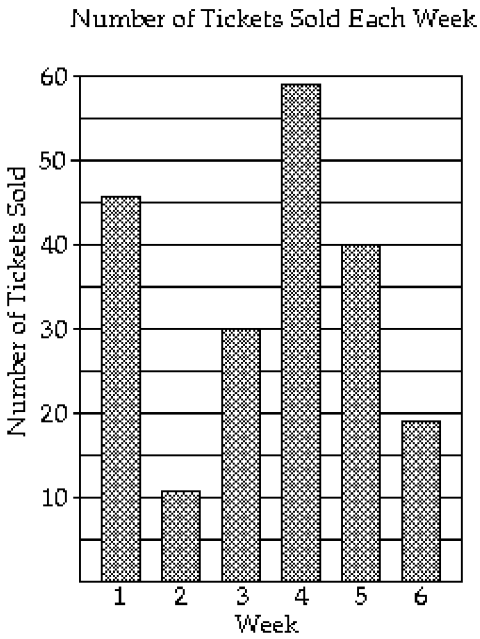
A) -3 - 3y B) -3 - 11y C) -3 + 11y D) -17 - 11y

Solve.

87) Trader Tower stands at 2858 feet high. Exchange Emporium is 812 feet tall. How much taller is Trader Tower than Exchange Emporium? 87) _____

A) 3670 ft B) 2046 ft C) -2046 ft D) -3670 ft

88) The bar graph shows the number of tickets sold each week by the garden club for their annual flower show. 88) _____



What is the difference in tickets sold from week 1 and week 6?

A) 65 tickets B) 37 tickets C) 32 tickets D) 27 tickets

Perform the indicated multiplication.

89) (-8)(-3)(3) 89) _____

A) 62 B) 172 C) 72 D) -72

90) (-3)(-4)(-1)(3) 90) _____

A) -26 B) 36 C) -136 D) -36

91) (2)(5)(2)(-5)(-4) 91) _____

A) -100 B) 400 C) -400 D) 0

Find the multiplicative inverse.

92) 19 92) _____

A) 1 B) $-\frac{1}{19}$ C) -19 D) $\frac{1}{19}$

93) $-\frac{3}{8}$ 93) _____

A) $-\frac{8}{3}$ B) 8 C) $-\frac{3}{8}$ D) $\frac{8}{3}$

94) 0 94) _____

A) $\frac{1}{0}$ B) 1 C) 0 D) Undefined

Rewrite the division as multiplication involving a multiplicative inverse. Use the multiplication to find the given quotient.

95) $-54 \div 9$ 95) _____

A) $-\frac{1}{54} \cdot (9)$; $-\frac{1}{6}$ B) $-54 \cdot \left(\frac{1}{9}\right)$; -6 C) $-54 \cdot \left(-\frac{1}{9}\right)$; 6 D) $-54 \cdot \left(\frac{1}{9}\right)$; 6

Perform the indicated division or state that the expression is undefined.

96) $\frac{0}{-47}$ 96) _____

A) 47 B) 0 C) 1 D) undefined

97) $24 \div \left(-\frac{3}{5}\right)$ 97) _____

A) -50 B) 40 C) -40 D) $-\frac{1}{40}$

98) $35 \div \left(-\frac{7}{3}\right)$ 98) _____

A) -15 B) -16 C) 15 D) -14

Simplify the algebraic expression.

99) $-9\left(-\frac{2}{9}y\right)$ 99) _____

A) 2 B) 9y C) $-2y$ D) 2y

100) $11b - 12b$ 100) _____

A) b B) $-23b$ C) $-b$ D) 23b

101) $10(8y + 5) - 3(7y + 7)$ 101) _____

A) $4y + 4$ B) $-42y$ C) $59y + 7$ D) $59y + 29$

Determine whether the given number is a solution of the equation.

102) $\frac{6y - 5}{4} = \frac{4y - 1}{5}$; -8 102) _____

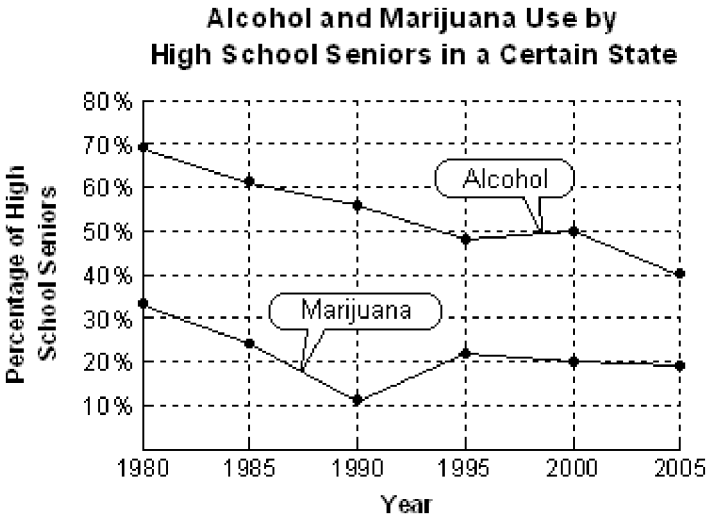
A) solution B) not a solution

Solve.

103) The cost in dollars of having a car towed is given by the algebraic expression $3x + 60$, where x is the number of miles the car is towed. Find the cost of having a car towed 9 miles. 103) _____

A) \$77 B) \$27 C) \$63 D) \$87

104) The line graph shows the percentage of high school seniors who used alcohol or marijuana from 1980 through 2005 in a certain state. 104) _____



Use the appropriate line graph to determine the percentage of seniors who used marijuana in 1995.

A) 42% B) 48% C) 22% D) 26%

Evaluate the exponential expression.

105) 3^4 105) _____

A) -81 B) 12 C) 81 D) -12

106) $(-12)^3$ 106) _____

A) -1728 B) -36 C) -1331 D) 1728

107) -12^2 107) _____

A) 144 B) -24 C) -144 D) -169

108) $(-1)^{11}$ 108) _____

A) 11 B) -11 C) -1 D) 1

Evaluate the algebraic expression for a) x = 4 and b) x = 18.

109) $4x^2 - 3x$ 109) _____

A) a) 16 b) 324 B) a) 76 b) 1350 C) a) 41 b) 18 D) a) 52 b) 1242

Simplify the algebraic expression, or state that the expression cannot be simplified.

110) $4x^6 + 9x^6$ 110) _____

A) $13x^6$ B) cannot be simplified

C) 78x D) $13x^{12}$

111) $9x^7 + 5x^3$ 111) _____

A) $14x^{14}$ B) cannot be simplified

C) $14x^7$ D) 98x

112) $18x^2 - 18x^2$ 112) _____

A) $-36x^2$ B) cannot be simplified

C) x^2 D) 0

Simplify the algebraic expression by removing parentheses and brackets.

113) $-3(2x - 8) - 4x + 9$ 113) _____

A) $2x + 33$ B) $-10x + 33$ C) $-10x - 15$ D) $10x + 33$

114) $3 - 3[5 - (4x + 1)]$ 114) _____

A) $-4x - 15$ B) $12x - 15$ C) $12x - 9$ D) $-4x - 9$

Use the order of operations to simplify the expression.

115) $36 \div 12 \cdot (-4)$ 115) _____

A) 4.5 B) -12 C) 12 D) $-\frac{3}{4}$

116) $28 \div 7(4) - 2$ 116) _____

A) -1 B) 47 C) $\frac{14}{13}$ D) 14

117) $(-5 - 2)(-3 + 5) - 4^3$ 117) _____

A) 50 B) 2 C) -78 D) 64

118) $\frac{163 + 7}{3^2 - 4}$ 118) _____

A) 32 B) 34 C) 85 D) 51

119) $25 - [9 - (4 - 8)] + (2 - 4)^3$ 119) _____

A) -20 B) 28 C) 20 D) 4

120) $[31 - (4 + 6) \div 2] - [1 + 15 \div 3]$ 120) _____

A) 15 B) 27 C) 17 D) 20

Solve.

121) If a rock falls from a height of 40 meters above the ground, the height H (in meters) after x seconds can be approximated using the formula $H = 40 - 4.9x^2$. What is the height of the rock after 2 seconds? 121) _____

A) 20.4 m B) 140.4 m C) 30.2 m D) -56.04 m

Determine whether the equation in one variable is linear.

122) $x - 8 = 6$ 122) _____

A) linear B) not linear

123) $\frac{x}{15} + 10 = 25$ 123) _____

A) linear B) not linear

124) $5\sqrt{x} - 8 = 0$ 124) _____

A) linear B) not linear

125) $97.3x = 3.2$ 125) _____

A) linear B) not linear

126) $|x + 6| = 13$ 126) _____

A) linear B) not linear

Solve the equation.

127) $a - 25 = 6$ 127) _____

A) {19} B) {-31} C) {-19} D) {31}

128) $18 = b - 3$ 128) _____

A) {15} B) {-15} C) {21} D) {-21}

129) $x + \frac{1}{5} = -\frac{2}{15}$ 129) _____

A) $\left\{-\frac{3}{20}\right\}$ B) $\left\{-\frac{1}{3}\right\}$ C) $\left\{-\frac{1}{5}\right\}$ D) $\left\{-\frac{26}{75}\right\}$

130) $5(2z - 3) = 9(z + 2)$ 130) _____

A) {33} B) {3} C) {8} D) {-3}

131) $-8.1 + 2x - 6.3 + 5x - 2.6 = 5.3 + 8x + 1.7$ 131) _____

A) {24} B) {-10} C) {10} D) {-24}

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.

132) The sum of a number and forty-four is fifty. 132) _____

A) $44x = 50$; 1.14 B) $x \div 44 = 50$; 2200

C) $x - 44 = 50$; 94 D) $x + 44 = 50$; 6

133) If 245 is subtracted from a number, the result is 413. 133) _____

A) $x - 245 = 413$; 658 B) $x - 245 = 413$; -658

C) $x + 245 = 413$; 168 D) $x + 413 = 245$; -168

Solve.

134) The altitude above sea level of an airplane just after taking off from an airport on a high plateau is given by the formula $h = 500t + 2805$, where h is in feet and t is the time in minutes since take-off. Find the altitude of the airplane after 4 minutes. 134) _____

A) 2000 ft B) 4805 ft C) 4905 ft D) 4705 ft

Solve the equation using the multiplication property of equality.

135) $-\frac{1}{13}a = 0$ 135) _____

A) {1} B) {-13} C) {0} D) {13}

136) $\frac{v}{-5} = 5$ 136) _____

A) {25} B) {-10} C) {-25} D) {10}

137) $2x + 11x = 14$ 137) _____

A) $\left\{\frac{13}{14}\right\}$ B) {182} C) {1} D) $\left\{\frac{14}{13}\right\}$

Solve the equation.

138) $-x = 14$ 138) _____

A) {-14} B) {14} C) {-1} D) {0}

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

139) $-29 = -5x - 4$ 139) _____

A) {5} B) {9} C) {-20} D) {-16}

140) $-8x = 30 + 7x$ 140) _____

A) {-2} B) {2} C) {-1} D) {45}

141) $9x + 6x - 9 = -7x$ 141) _____

A) $\left\{\frac{9}{22}\right\}$ B) $\left\{-\frac{9}{22}\right\}$ C) $\left\{-\frac{22}{9}\right\}$ D) $\left\{-\frac{9}{8}\right\}$

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.

142) If thirty is divided by a number, the result is five. 142) _____

A) $30 - x = 5$; 25 B) $\frac{30}{x} = 5$; 6 C) $\frac{x}{30} = 5$; 150 D) $\frac{30}{5} = x$; 6

Solve the problem.

143) 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 60 miles per hour, what distance can be traveled in 2 hours? 143) _____

A) 240 mi B) 24 mi C) 120 mi D) 60 mi

Solve the equation.

144) $12 - 7x = 5x - 2x - 48$ 144) _____

A) {12} B) $\left\{\frac{24}{5}\right\}$ C) {6} D) {9}

145) $4(3x + 3) - 29 = 10x + 1$ 145) _____

A) {36} B) {18} C) {9} D) {-9}

146) $6 - 8(y - 6) = 1 + 6y$ 146) _____

A) $\left\{-\frac{55}{2}\right\}$ B) $\left\{-\frac{1}{14}\right\}$ C) $\left\{\frac{53}{14}\right\}$ D) $\left\{-\frac{43}{14}\right\}$

147) $-11 - (2y + 1) = 3(y + 2) + 4y$ 147) _____

A) $\left\{-\frac{4}{3}\right\}$ B) $\left\{-\frac{18}{5}\right\}$ C) $\{-2\}$ D) $\left\{-\frac{1}{2}\right\}$

148) $\frac{f}{6} - 4 = 1$ 148) _____

A) {18} B) {30} C) {-18} D) {-30}

149) $\frac{2x}{5} - \frac{x}{3} = 5$ 149) _____

A) {-75} B) {150} C) {75} D) {-150}

Solve the equation. Use words or set notation to identify equations that have no solution, or equations that are true for all real numbers.

150) $7(x + 5) = 7x + 35$ 150) _____

A) $\varnothing$ B) {70}
C) {x | x is a real number} D) {0}

151) $2x - 8 - 6x - 3 = 4x - 8x - 14$ 151) _____

A) {0} B) {-192}
C) {x | x is a real number} D) $\varnothing$

152) $22x + 6(x + 1) = 28(x + 1) - 22$ 152) _____

A) {x | x is a real number} B) $\varnothing$
C) {0} D) {1}

153) $3(4x - 2) + 26 = 9x - 1$ 153) _____

A) {-7} B) {x | x is a real number}
C) {7} D) $\varnothing$

154) $\frac{1}{4}(8x - 12) = 6\left(\frac{1}{3}x - \frac{1}{2}\right) + 7$ 154) _____

A) $\varnothing$ B) $\left\{\frac{7}{4}\right\}$

C) {x | x is a real number} D) {0}

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.

155) Four times a number added to 9 times the number equals 65. Find the number. 155) _____

A) $4x(9 + x) = 65$; 7.2 B) $4(x + 9) = 65x$; 0.6
C) $4x + 9x = 65$; 5 D) $4x - 9x = 65$; -7.2

156) The sum of four times a number and 7 is equal to the difference of twice the number and 9. Find the number. 156) _____

A) $4(x + 7) = 2x - 9;\ -\frac{37}{2}$ B) $4x + 7 = 2x - 9;\ -8$

C) $4x + 7 = 2x - 9;\ 8$ D) $4x + 7 = 2x + 9;\ 1$

Solve the problem.

157) There is a formula that gives a correspondence between women's shoe sizes in the United States and those in Italy. The formula is $S = 2(x + 12)$, where S is the size in Italy and x is the size in the United States. What would be the US size for an Italian size of 32? 157) _____

A) 76 B) 2 C) 4 D) 8

158) In one state, speeding fines are determined by the formula $F = 6(x - 70) + 50$, where F is the cost, in dollars, of the fine if a person is caught driving x miles per hour. If the fine comes to $140, how fast was the person driving? 158) _____

A) 83 mph B) 95 mph C) 85 mph D) 87 mph

Solve the formula for the specified variable.

159) $A = \frac{1}{2}bh$ for b 159) _____

A) $b = \frac{h}{2A}$ B) $b = \frac{2A}{h}$ C) $b = \frac{A}{2h}$ D) $b = \frac{Ah}{2}$

160) $P = 2L + 2W$ for L 160) _____

A) $L = P - W$ B) $L = \frac{P - 2W}{2}$ C) $L = d - 2W$ D) $L = \frac{P - W}{2}$

Solve the equation for y.

161) $11x + 3y = 16$ 161) _____

A) $y = 11x - 16$ B) $y = \frac{16 + 11x}{3}$ C) $y = \frac{11 + 16x}{3}$ D) $y = \frac{16 - 11x}{3}$

Express the percent as a decimal.

162) 67.2% 162) _____

A) 6.72 B) 0.672 C) 0.562 D) 0.0672

163) 486% 163) _____

A) 48.6 B) 4.86 C) 0.486 D) 4.87

164) 0.017% 164) _____

A) 1.7 B) 0.000017 C) 0.00017 D) 0.0017

165) $\frac{1}{16}\%$ 165) _____

A) 0.00625 B) 6.25 C) 0.000625 D) 0.0625

Express the decimal as a percent.

166) 0.6 166) _____

A) 60% B) 0.06% C) 0.6% D) 600%

167) 0.00284 167) _____

A) 0.142% B) 0.0284% C) 0.284% D) 0.000284%

Use the percent formula, A = PB: A is P percent of B, to solve.

168) What number is 31% of 70? 168) _____

A) 217 B) 2170 C) 2.17 D) 21.7

169) 608 is what percent of 304? 169) _____

A) 200% B) 0.2% C) 2% D) 50%

170) What percent of 2.5 is 0.4? 170) _____

A) 12% B) 16% C) 1.6% D) 160%

Solve the problem.

171) Jeans are on sale at the local department store for 30% off. If the jeans originally cost $50, find the sale price. (Round to the nearest cent, if necessary.) 171) _____

A) $35.00 B) $15.00 C) $65.00 D) $48.50

172) Sales at a local ice cream shop went up 60% in 5 years. If 37,000 ice cream cones were sold in the current year, find the number of ice cream cones sold 5 years ago. (Round to the nearest integer, if necessary.) 172) _____

A) 61,667 ice cream cones B) 14,800 ice cream cones

C) 22,200 ice cream cones D) 23,125 ice cream cones

173) Of the 60 students in an algebra class, 8 of them received an F on the mid-term exam. What percent of the algebra students received an F on the exam? (Round to the nearest tenth of a percent, if necessary.) 173) _____

A) 75% B) 13.3% C) 7.5% D) 133.3%

174) Due to a lack of funding, the number of students enrolled at City College went from 6000 last year to 5000 this year. Find the percent decrease in enrollment. (Round to the nearest tenth of a percent, if necessary.) 174) _____

A) 16.7% B) 120% C) 83.3% D) 20%

175) If 100 is decreased to 95, the decrease is what percent of the original number? 175) _____

A) 0.5% B) 0.0005% C) 0.05% D) 5%

Let x represent the number. Write the English phrase as an algebraic expression.

176) The product of 9 and a number, added to 7. 176) _____

A) 63 + x B) 9 + 7x C) 7 + 9x D) 63x

177) The product of -26 and the sum of a number and 18. 177) _____

A) -26x + 18 B) -26(x + 18) C) -26 + 18x D) -468x

178) Five times a number decreased by three-fourths of the same number. 178) _____

A) $\frac{3x}{4} - 5x$ B) $5x - \frac{3x}{4}$ C) $5x - \frac{3}{4}$ D) $5(x - \frac{3}{4})$

Let x represent the number. Use the given conditions to write an equation. Solve the equation and find the number.

179) Four times a number added to 7 times the number equals 44. Find the number. 179) _____

A) $4(x + 7) = 44x$; 0.7 B) $4x + 7x = 44$; 4

C) $4x(7 + x) = 44$; 6.3 D) $4x - 7x = 44$; -6.3

Solve the problem.

180) 30 marbles are to be divided into three bags so that the second bag has three times as many marbles as the first bag and the third bag has twice as many as the first bag. If x is the number of marbles in the first bag, find the number of marbles in each bag. 180) _____

A) 1st bag = 6 marbles; 2nd bag = 18 marbles; 3rd bag = 12 marbles

B) 1st bag = 5 marbles; 2nd bag = 10 marbles; 3rd bag = 15 marbles

C) 1st bag = 6 marbles; 2nd bag = 14 marbles; 3rd bag = 10 marbles

D) 1st bag = 5 marbles; 2nd bag = 15 marbles; 3rd bag = 10 marbles

181) A promotional deal for long distance phone service charges a $15 basic fee plus $0.05 per minute for all calls. If Joe's phone bill was $60 under this promotional deal, how many minutes of phone calls did he make? Round to the nearest integer, if necessary. 181) _____

A) 2 minutes B) 9 minutes C) 1500 minutes D) 900 minutes

182) Two angles are complementary if their sum is 90°. If the measure of the first angle is x°, and the measure of the second angle is (3x - 2)°, find the measure of each angle. 182) _____

A) 1st angle = 22°; 2nd angle = 68° B) 1st angle = 31°; 2nd angle = 59°

C) 1st angle = 23°; 2nd angle = 67° D) 1st angle = 22°; 2nd angle = 64°

183) An isosceles triangle contains two angles of the same measure. If the measure of the third angle is 51° less than the measure of either of the other two identical angles, find the measure of one of the identical angles. (Hint: The sum of the angles of a triangle is 180°.) 183) _____

A) 26° B) 115.5° C) 77° D) 57°

184) A 10-ft. board is cut into 2 pieces so that one piece is 2 feet longer than 3 times the shorter piece. If the shorter piece is x feet long, find the lengths of both pieces. 184) _____

A) shorter piece: 2 ft.; longer piece: 8 ft. B) shorter piece: 28 ft; longer piece: 30 ft.

C) shorter piece: 5 ft; longer piece: 30 ft. D) shorter piece: 6 ft; longer piece: 32 ft.

Use a formula for perimeter or area to solve the problem.

185) The length of a rectangle is 119 in. and the width is 72 in. Find its perimeter. 185) _____

A) 8568 in. B) 382 in. C) 310 in. D) 191 in.

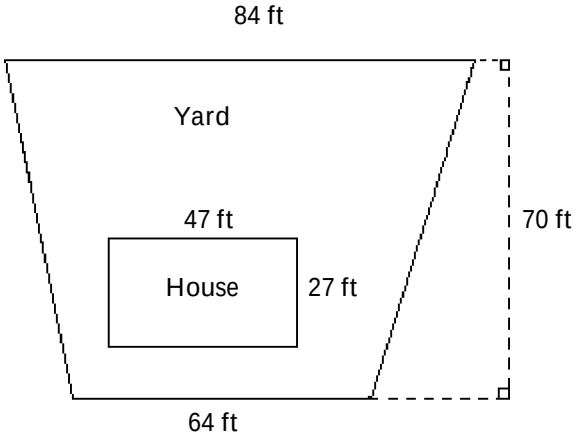
Solve.

186) A rectangular carpet has a perimeter of 284 inches. The length of the carpet is 90 inches more than the width. What are the dimensions of the carpet? 186) _____

A) 84 by 110 inches B) 116 by 26 inches

C) 129 by 142 inches D) 116 by 142 inches

187) 187) _____



A homeowner wants to know how much grass seed to buy. First the size of the yard must be determined. Use the drawing to determine how many square feet are in the yard.

A) 5180 ft^2 B) 4611 ft^2 C) 9091 ft^2 D) 3911 ft^2

Use the formula for the area or circumference of a circle to solve the problem. Where applicable, express answers in terms of π.

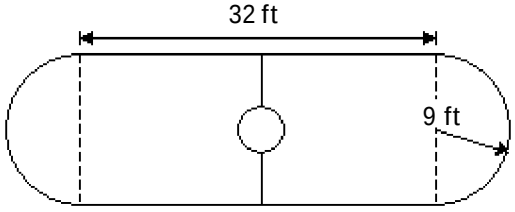
188) 188) _____

Find the area of the circle.

A) 9π mi^2 B) 12π mi^2 C) 7π mi^2 D) 6π mi^2

Solve.

189) Find the area of the skating rink. Use $\pi = 3.14$ and round to the nearest tenth. 189) _____



A) 542.3 sq. ft B) 1084.7 sq. ft C) 830.3 sq. ft D) 796.7 sq. ft

190) Find the volume of an aluminum can that has a radius of 2.5 centimeters and a height of 6 centimeters. Use $\pi = 3.14$ and round to the nearest tenth. 190) _____

A) 117.8 cm^3 B) 47.1 cm^3 C) 94.2 cm^3 D) 471 cm^3

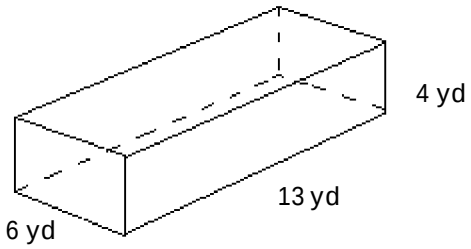
Use the relationship among the three angles of any triangle to solve the problem.

191) Two angles of a triangle are 30° and 50°. Find the third angle. 191) _____

A) 280° B) 100° C) 80° D) 10°

Find the volume of the figure. Where applicable, express answers in terms of π.

192) 192) _____



A) 312 yd^3 B) 144 yd^3 C) 208 yd^3 D) 1014 yd^3

Use the relationship among the three angles of any triangle to solve the problem.

193) One angle of a triangle is 2 times as large as another. The measure of the third angle is 120° greater than that of the smallest angle. Find the measure of each angle. 193) _____

A) 15°, 30°, 120° B) 15°, 30°, 135° C) 25°, 50°, 105° D) 20°, 40°, 120°

Find the measure of the indicated angle.

194) Find the measure of the complement of 38°. 194) _____

A) 322° B) 142° C) 232° D) 52°

195) Find the measure of the supplement of 18°. 195) _____

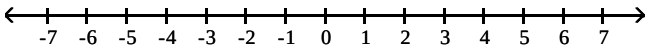
A) 342° B) 72° C) 252° D) 162°

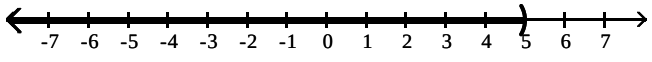
196) The angle's measure is 40° more than that of its supplement. 196) _____

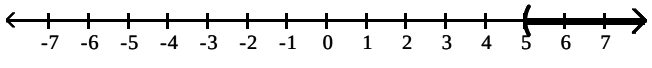
A) 25° B) 65° C) 110° D) 70°

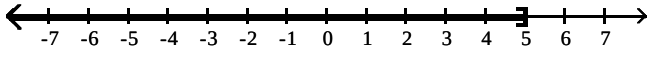
Graph the solution of the inequality on a number line.

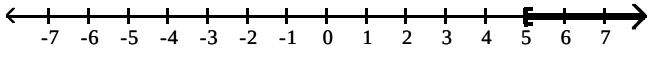
197) $x > 5$ 197) _____



A)


B)


C)


D)


Express the solution set of the inequality in interval notation.

198) $x < -13$ 198) _____

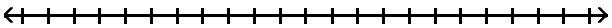
A) $(-\infty, -13]$ B) $(-13, \infty)$ C) $[-13, \infty)$ D) $(-\infty, -13)$

199) $x \geq 5$ 199) _____

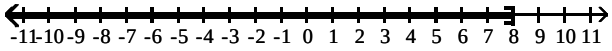
A) $[5, \infty)$ B) $(-\infty, 5)$ C) $(-\infty, 5]$ D) $(5, \infty)$

Use both the addition and multiplication properties of inequality to solve the inequality. Graph the solution set on a number line.

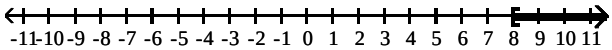
200) $3x + 9 < 33$ 200) _____



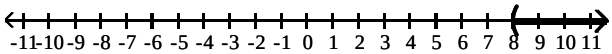
A) $(-\infty, 8]$



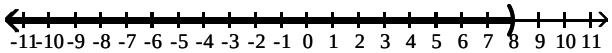
B) $[8, \infty)$



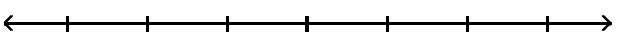
C) $(8, \infty)$



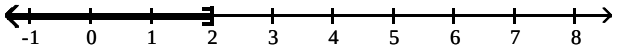
D) $(-\infty, 8)$



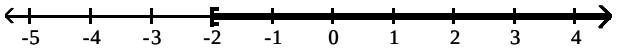
201) $11r - 1 \geq 9r - 5$ 201) _____



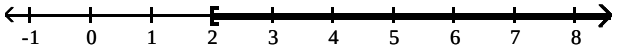
A) $(-\infty, 2]$



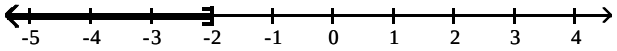
B) $[-2, \infty)$



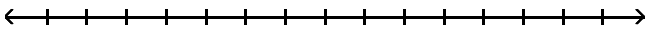
C) $[2, \infty)$



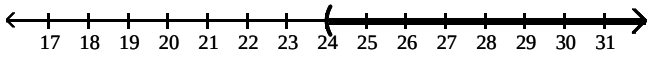
D) $(-\infty, -2]$



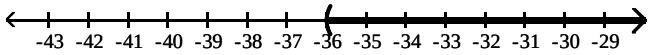
202) $5x - 6 < 6(x + 5)$ 202) _____



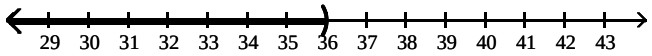
A) $(24, \infty)$



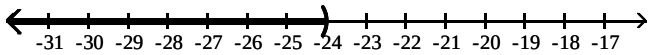
B) $(-36, \infty)$



C) $(-\infty, 36)$



D) $(-\infty, -24)$



Solve the inequality.

203) $x + 8 \geq x - 5$ 203) _____

A) $\left[-\frac{13}{2}, \infty\right)$ B) $\emptyset$ C) $(-\infty, \infty)$ D) $\left(-\infty, -\frac{13}{2}\right]$

204) $-3(-3 - x) < 5x + 21 - 12 - 2x$ 204) _____

A) $\emptyset$ B) $(-\infty, 9)$ C) $(-\infty, \infty)$ D) $(-\infty, 0)$

Solve the problem.

205) Claire has received scores of 85, 88, 87, and 90 on her algebra tests. What is the minimum score she must receive on the fifth test to have an overall test score average of at least 87? (Hint: The average of a list of numbers is their sum divided by the number of numbers in the list.) 205) _____

A) 83 B) 84 C) 86 D) 85

206) An archery set containing a bow and three arrows costs $68. Additional arrows can be purchased for $5 each. Gerri has $138 to spend on the set and additional arrows. Including the arrows in the set, what is the maximum total number of arrows Gerri can purchase? 206) _____

A) at most 14 arrows B) at most 2 arrow(s)

C) at most 17 arrows D) at most 27 arrows

Answer Key
Testname: M30E1PRAC_CH1-2

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

51) B
52) B
53) B
54) A
55) B
56) C
57) C
58) B
59) C
60) D
61) C
62) D
63) A
64) C
65) D
66) D
67) A
68) A
69) D
70) C
71) C
72) B
73) C
74) A
75) A
76) C
77) D
78) C
79) B
80) A
81) D
82) B
83) B
84) B
85) A
86) B
87) B
88) D
89) C
90) D
91) B
92) D
93) A
94) D
95) B
96) B
97) C
98) A
99) D
100) C

101) D
102) B
103) D
104) C
105) C
106) A
107) C
108) C
109) D
110) A
111) B
112) D
113) B
114) C
115) B
116) D
117) C
118) B
119) D
120) D
121) A
122) A
123) A
124) B
125) A
126) B
127) D
128) C
129) B
130) A
131) D
132) D
133) A
134) B
135) C
136) C
137) D
138) A
139) A
140) A
141) A
142) B
143) C
144) C
145) C
146) C
147) C
148) B
149) C
150) C

151) D
152) A
153) A
154) A
155) C
156) B
157) C
158) C
159) B
160) B
161) D
162) B
163) B
164) C
165) C
166) A
167) C
168) D
169) A
170) B
171) A
172) D
173) B
174) A
175) D
176) C
177) B
178) B
179) B
180) D
181) D
182) C
183) C
184) A
185) B
186) B
187) D
188) A
189) C
190) A
191) B
192) A
193) B
194) D
195) D
196) C
197) B
198) D
199) A
200) D

201) B
202) B
203) C
204) A
205) D
206) C