Test Bank for Intermediate Algebra For College Students 10th Angel

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Exam

Name_____

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

Name the indicated property.

1) If x = 4, then 4 = x. 1) _____
A) multiplication property
B) symmetric property
C) reflexive property
D) transitive property

2) If x = 0 and 0 = y, then x = y. 2) _____
A) transitive property
B) multiplication property
C) reflexive property
D) symmetric property

3) 8x + 12 = 8x + 12 3) _____
A) transitive property
B) reflexive property
C) addition property
D) symmetric property

4) If x = –7, then x + 4 = –7 + 4 4) _____
A) addition property
B) symmetric property
C) reflexive property
D) transitive property

5) If x + 9 = –6, then x + 9 – 9 = –6 – 9 5) _____
A) reflexive property
B) addition property
C) transitive property
D) symmetric property

6) If x = 4 , then x – 4 = 4 – 4 6) _____
A) addition property
B) symmetric property
C) transitive property
D) reflexive property

7) If x + 2 = y + 2, and y + 2 = z, then x + 2 = z 7) _____
A) addition property
B) reflexive property
C) symmetric property
D) transitive property

8) If 3x = –6, then –3(3x) = –3(–6) 8) _____
A) multiplication property
B) symmetric property
C) transitive property
D) reflexive property

9) 3x = 21, then $\frac{1}{3}(3x) = \frac{1}{3}(21)$ 9) _____
A) multiplication property
B) reflexive property
C) symmetric property
D) transitive property

Give the degree of the term.

10) –5x 10) _____
A) 0 B) –1 C) –5 D) 1

11) $-6x^8$ 11) _____
A) 48 B) –6 C) 8 D) –48

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12) $-2xy$ 12) _____

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

13) 7 13) _____

A) 1 B) 7 C) -7 D) 0

14) -5 14) _____

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

15) $2m^9b^2c^7$ 15) _____

A) 2 B) 9 C) 18 D) 7

16) $4g^5c^6$ 16) _____

A) 11 B) 6 C) 15 D) 4

17) $2xy^9z^4$ 17) _____

A) 36 B) 14 C) 2 D) 13

18) $16x^2y$ 18) _____

A) 8 B) 2 C) 16 D) 3

Simplify the expression. If the expression cannot be simplified, so state.

19) $9a - 4a + 5$ 19) _____

A) $-5a + 5$ B) $5a + 5$

C) $13a + 5$ D) cannot be simplified

20) $-6y - 2x - 4x$ 20) _____

A) $-6y - 6x$ B) $-6y - 2x$ C) $-12xy$ D) $-6y + 2x$

21) $-9y - 7y^2$ 21) _____

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

C) $-16y^2$ D) cannot be simplified

22) $-3y + 7 - 5 + 1 + y - 3$ 22) _____

A) $-2y$ B) $-2y - 1$ C) $-4y$ D) $-4y + 1$

23) $-3x^4 + 15x^4$ 23) _____

A) $12x^8$ B) $12x^{16}$ C) $12x^4$ D) $11x^4$

24) $-0.3x^6 - 1.4x^6 - 0.4x^6$ 24) _____

A) $-2.1x^6$ B) $-14x^6$

C) $-2.4x^6$ D) cannot be simplified

25) $3y^2 - 11y^2$ 25) _____

A) $-8y^4$ B) $-8y^2$

C) $14y^2$ D) cannot be simplified

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26) $8z + 4 - 2z + 6$ 26) _____

A) $10z + 10$ B) $16z$ C) $6z - 2$ D) $6z + 10$

27) $5.4k - 1.3 - 3.6k + 8 + 2.4k$ 27) _____

A) $4.2k + 6.7$ B) $4.2k - 6.7$ C) $11.4k + 6.7$ D) $4.2k + 9.3$

28) $-5(10r + 3) + 6(7r + 7)$ 28) _____

A) $-8r + 27$ B) $-65r$ C) $-8r + 3$ D) $5r - 2$

29) $2 + 2(17 - 9m)$ 29) _____

A) $36 - 18m$ B) $36 - 9m$ C) $34 - 18m$ D) $36 + 18m$

30) $8(y + 7) - 5$ 30) _____

A) $8y + 51$ B) $8y + 16$ C) $8y + 2$ D) $15y - 5$

31) $(7z + 12) - (4z - 6)$ 31) _____

A) $3z + 18$ B) $3z - 18$ C) $11z + 18$ D) $3z + 6$

32) $-3(2x - 6) - 4x + 5$ 32) _____

A) $-10x + 23$ B) $-10x - 13$ C) $10x + 23$ D) $2x + 23$

33) $3[5x^2 + 2(6 - x)]$ 33) _____

A) $15x^2 - 6x + 36$ B) $15x^2 - 2x + 12$ C) $15x^2 + 6x + 36$ D) $15x^2 - 3x + 36$

34) $-[-10x^2 + (5x^2 + 8)] + [\,(-5x^2 + (-10 - 6x^2)) + 9x^2]$ 34) _____

A) $3x^2 - 18$ B) $25x^2 + 18$ C) $7x^2 + 2$ D) $25x^2 + 2$

35) $7\{9y^2 + 5[6y^2 - (y + z^2)]\}$ 35) _____

A) $238y^2 - 35y$ B) $273y^2 - 35y - 35z^2$

C) $273y^2 - 7y + 7z^2$ D) $93y^2 - 5y - 5z^2$

36) $7x^4y^3 + 2(2x^4y^3 - 5x^3y^4)$ 36) _____

A) $11x^4y^3 - 10x^3y^4$ B) $11x^4y^3 - 5x^3y^4$

C) $1x^7y^7$ D) cannot be simplified

37) $r^2s + 4rs - [-(rs + 7r^2s) + rs]$ 37) _____

A) $-6r^2s + 6rs$ B) $7r^2s + 2rs$ C) $8r^2s + 4rs$ D) $12r^3s^2$

Solve the equation.

38) $9n - 6 = 75$ 38) _____

A) 76 B) 72 C) 14 D) 9

39) $-10y + 3 = -1 + 7y$ 39) _____

A) $-\frac{3}{2}$ B) $-\frac{17}{4}$ C) $\frac{4}{17}$ D) $\frac{17}{4}$

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40) $6x - (3x - 1) = 2$ 40) _____

A) $-\frac{1}{3}$ B) $\frac{1}{9}$ C) $\frac{1}{3}$ D) $-\frac{1}{9}$

41) $3(x + 8) = 4(x - 2)$ 41) _____

A) 16 B) 32 C) −32 D) −16

42) $4(2x - 3) = 7(x + 2)$ 42) _____

A) 26 B) 6 C) −2 D) 2

43) $-3(x + 4) - (-4x + 2) = -2$ 43) _____

A) −12 B) 4 C) 12 D) −16

44) $2x + 6(2x - 6) = -13 - 9x$ 44) _____

A) −1 B) $-\frac{49}{23}$ C) $-\frac{49}{5}$ D) 1

45) $8y + 4(5 + y) = 3(y - 8) + 10y$ 45) _____

A) −44 B) −13 C) 13 D) 44

46) $4[3x + 1 - 2(x + 1)] = -3x + 4$ 46) _____

A) $\frac{8}{3}$ B) $\frac{8}{7}$ C) $\frac{16}{3}$ D) $\frac{16}{7}$

47) $2\{3 - [4(k + 7) - 3(k + 7)]\} = -3k$ 47) _____

A) 8 B) $\frac{1}{2}$ C) $-\frac{5}{3}$ D) $\frac{4}{3}$

48) $-\{5(d + 2) - 6[3d - 2(3d + 8)] - 7\} = -18d + 151$ 48) _____

A) $\frac{85}{8}$ B) −50 C) 55 D) $\frac{250}{41}$

49) $\frac{f}{2} - 5 = 1$ 49) _____

A) 8 B) 12 C) −8 D) −12

50) $\frac{1}{2}(a - 1) = -4$ 50) _____

A) −7 B) −9 C) 7 D) 9

51) $\frac{1}{4}(r + 6) = \frac{1}{8}(r + 8)$ 51) _____

A) −4 B) 6 C) 48 D) 4

52) $\frac{2}{5}x - \frac{1}{3}x = 4$ 52) _____

A) −60 B) 60 C) −120 D) 120

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53) $\frac{1}{8}b - 6 = -4$ 53) _____

A) 16 B) −18 C) −16 D) 18

54) $\frac{4}{3}(7 - x) = x$ 54) _____

A) $\frac{28}{5}$ B) 7 C) 4 D) −4

55) $\frac{3}{5}(y - 2) = 1 - 3y$ 55) _____

A) $\frac{11}{6}$ B) $\frac{11}{18}$ C) $\frac{7}{6}$ D) $-\frac{11}{18}$

56) $22.3 = -24.4 - n$ 56) _____

A) 2.1 B) −2.1 C) 46.7 D) −46.7

57) $1.1x + 2.3 = 0.7x + 0.02$ 57) _____

A) −5.7 B) −5.643 C) 0.175 D) −5.69

58) $0.70x - 0.50(40 + x) = -0.35(40)$ 58) _____

A) 20 B) 40 C) 30 D) 15

59) $0.04y + 0.11(900 - y) = 0.43y$ 59) _____

A) 198 B) 495 C) 49.5 D) 396

60) $0.6(15x - 4000) = -0.8(17x + 3000) + 25.7x$ 60) _____

A) 0.32258065 B) 1 C) 0 D) −774.19

Indicate whether the equation is conditional, an identity, or a contradiction.

61) $4(2x - 8) = 8x - 32$ 61) _____

A) identity B) contradiction C) conditional

62) $7x = 7x$ 62) _____

A) contradiction B) conditional C) identity

63) $8x + 56 = 8(x + 7) + 6$ 63) _____

A) contradiction B) conditional C) identity

64) $4x + 3x = 6x$ 64) _____

A) contradiction B) conditional C) identity

Solve the problem.

65) A solution is being heated in a controlled lab environment. The temperature of the solution is estimated by the equation $T = 6x + 5$ where T is the temperature of the solution and x is the time in minutes starting with when the solution was subjected to the heat. What will be the temperature of the solution when $x = 6$ minutes? 65) _____

A) 41 B) 31 C) 66 D) 11

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66) The average price (in dollars) to rent a studio in a certain city can be approximated by the equation $p = 27.4t + 563$ where t is the number of years since 1990. Solve this equation for t and use the new equation to determine approximately what year it will be when the average price of a studio in this city reaches $1138.40. 66) _____

A) 2012 B) 2011 C) 2013 D) 2014

Solve the equation for the specified symbol.

67) $V = \frac{B\odot}{q}$ for $\odot$ 67) _____

A) $\odot = \frac{B}{qV}$ B) $\odot = \frac{V}{qB}$ C) $\odot = \frac{qB}{V}$ D) $\odot = \frac{qV}{B}$

68) $\triangle = \frac{\varrho(\odot)}{\alpha} + \square$ for $\odot$ 68) _____

A) $\odot = \frac{\triangle - \square}{\varrho}$ B) $\odot = \frac{\alpha}{\triangle - \square}$ C) $\odot = \frac{\alpha(\triangle - \square)}{\varrho}$ D) $\odot = \frac{\varrho(\triangle - \square)}{\alpha}$

Solve the problem.

69) Mr. Brown just fenced in an area for his dog. He used exactly 36 feet of fencing for the rectangular shaped enclosure. If the length of the enclosure is 11 feet, what is its width? The formula for the perimeter of a rectangle is $P = 2l + 2w$. 69) _____

A) 7 ft B) 29 ft C) 14 ft D) $3\frac{3}{11}$ ft

70) Josh makes a $1000, 7% simple interest personal loan to his friend Sean for a period of 9 years. When Sean settles his loan at the end of the 9 years, how much money, in total, must he pay Josh? The formula for simple interest is $I = prt$. 70) _____

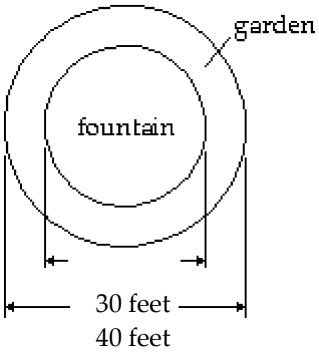
A) $64,000 B) $630 C) $1063 D) $1630

71) A family is preparing an area in their yard for playground equipment. They have marked an area that is 12 feet by 24 feet. They want to fill the area with wood chips to a depth of 4 inches. Find the volume of wood chips required in cubic feet. 71) _____

A) 48 cubic ft B) 1152 cubic ft C) 96 cubic ft D) 864 cubic ft

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72) In Little City Park there is a circular fountain. The park district has decided to plant a circular garden around the fountain. In order to purchase the appropriate number of plants, they must determine the area of the garden in square feet. Find the area rounded to two decimal places, if necessary. The formula for the area of a circle is $A = \pi r^2$. Use 3.14 as an approximation for π. 72) _____



A) 1099 sq ft B) 2198 sq ft C) 549.5 sq ft D) 1725.43 sq ft

73) Find the total cost of tiling a rectangular floor that is 6 meters long and 8 meters wide if it costs $8.03 to tile one square meter. Round to the nearest cent. The formula for the area of a rectangle is $A = lw$. 73) _____

A) $48.00 B) $224.84 C) $385.44 D) $112.42

74) A canvas for a mural is in the shape of a right triangle. Before the mural can be painted, the canvas must be varnished. The base of the mural is 5 meters and the height of the mural is 7 meters. How many cans of varnish will you need if each can covers 10 square meters? The formula for the area of a right triangle is $A = \frac{1}{2}bh$. 74) _____

A) 18 cans of varnish B) 4 cans of varnish
C) 2 cans of varnish D) 7 cans of varnish

75) Find the amount in a savings account at the end of 5 years if the amount originally deposited (the principal) is $7000 and the interest rate is 5% compounded quarterly. 75) _____

The formula for the final amount is $A = P\left(1 + \frac{r}{n}\right)^{nt}$.

A) $7448.58 B) $8974.26 C) $141,750.00 D) $9871.69

Evaluate the formula for the values given.

76) $P = 2L + 2W$ when $L = 2$ and $W = 6$ 76) _____

A) $P = 24$ B) $P = 16$ C) $P = 10$ D) $P = 8$

77) $A = \frac{1}{2}bh$ when $b = 12$ and $h = 14$ 77) _____

A) $A = 168$ B) $A = 84$ C) $A = 26$ D) $A = 26\frac{1}{2}$

78) $d = rt$ when $r = 7$ and $t = 6$ 78) _____

A) $d = 35$ B) $d = 0.2$ C) $d = 42$ D) $d = 49$

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79) $L = \frac{P - 2W}{2}$ when $P = 30$ and $W = 8$ 79) _____

A) $L = 15$ B) $L = 7$ C) $L = 11$ D) $L = 22$

80) $B = \frac{3V}{h}$ when $V = 12$ and $h = 2$ 80) _____

A) $B = 18$ B) $B = 14$ C) $B = 24$ D) $B = 6$

81) $t = \frac{I}{pr}$ when $I = 11.20$, $p = 140.00$, and $r = 0.08$ 81) _____

A) $t = 1.2544$ B) $t = 1$ C) $t = 125.44$ D) $t = 0.1$

82) $h = \frac{2A}{b + B}$ when $A = 94.5$, $b = 13$, and $B = 14$ 82) _____

A) $h = 13\frac{1}{2}$ B) $h = 182$ C) $h = 7$ D) $h = 81$

Solve the equation for y.

83) $x = 7y + 9$ 83) _____

A) $y = \frac{1}{7}x - 9$ B) $y = \frac{1}{7}x - \frac{9}{7}$ C) $y = x - \frac{9}{7}$ D) $y = 7x - 9$

84) $8x - 3y = 7$ 84) _____

A) $y = \frac{3}{8}x + \frac{7}{8}$ B) $y = \frac{8}{3}x - \frac{7}{3}$ C) $y = 8x - 7$ D) $y = \frac{8}{3}x + \frac{7}{3}$

85) $13x + 4y = 3$ 85) _____

A) $y = 13x - 3$ B) $y = \frac{13}{4}x + \frac{3}{4}$ C) $y = \frac{13}{4}x - \frac{3}{4}$ D) $y = -\frac{13}{4}x + \frac{3}{4}$

86) $2x + 7y = 10x + 1$ 86) _____

A) $y = \frac{7}{8}x - \frac{1}{8}$ B) $y = 8x + 12$ C) $y = \frac{8}{7}x + \frac{1}{7}$ D) $y = \frac{12}{7}x + \frac{1}{7}$

Solve the equation for the indicated variable.

87) $A = \frac{1}{2}bh$, for b 87) _____

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

88) $S = 2\pi rh + 2\pi r^2$, for h 88) _____

A) $h = S - r$ B) $h = \frac{S}{2\pi r} - 1$ C) $h = \frac{S - 2\pi r^2}{2\pi r}$ D) $h = 2\pi(S - r)$

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89) $V = \frac{1}{3}Bh$, for h

89) _____

A) $h = \frac{3B}{V}$ B) $h = \frac{3V}{B}$ C) $h = \frac{V}{3B}$ D) $h = \frac{B}{3V}$

90) $P = S_1 + S_2 + S_3$, for S_3

90) _____

A) $S_3 = P - S_1 - S_2$ B) $S_3 = S_1 + P - S_2$ C) $S_3 = S_1 + S_2 - P$ D) $S_3 = P + S_1 + S_2$

91) $F = \frac{9}{5}C + 32$, for C

91) _____

A) $C = \frac{5}{F - 32}$ B) $C = \frac{F - 32}{9}$ C) $C = \frac{9}{5}(F - 32)$ D) $C = \frac{5}{9}(F - 32)$

92) $d = rt$, for t

92) _____

A) $t = \frac{r}{d}$ B) $t = d - r$ C) $t = dr$ D) $t = \frac{d}{r}$

93) $P = 2L + 2W$, for L

93) _____

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

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

94) The sum of 142 and a number

94) _____

A) $142 - x$ B) $142 + x$ C) 142 D) 142x

95) A number increased by 73

95) _____

A) 73x B) $x - 73$ C) $x + 73$ D) 73

96) 35 less than a number

96) _____

A) 35x B) $x - 35$ C) $x + 35$ D) $35 - x$

97) The quotient of a number and 65

97) _____

A) $65 - x$ B) $\frac{x}{65}$ C) 65x D) $\frac{65}{x}$

98) 16 less than the product of 2 and a number

98) _____

A) $16 - 2x$ B) $2x - 16$ C) $2 + x - 16$ D) $\frac{x}{2} - 16$

99) The sum of twice a number and 30

99) _____

A) $2(x + 30)$ B) $60 + x$ C) $2x + 30$ D) $2 + x + 30$

100) Twice the sum of a number and 9

100) _____

A) $9(x + 2)$ B) $2(x + 9)$ C) $18 + x$ D) $2x + 9$

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101) Six times the difference of a number and 16 101) _____

A) 6(16 – x) B) $\frac{x - 16}{6}$ C) 6(x – 16) D) 6x – 16

Write a mathematical expression for the situation described.

102) Two numbers have a sum of 39. If one number is q, express the other number in terms of q. 102) _____

A) q + 39 B) 39 – q C) 39 – 2q D) q – 39

103) A 52–centimeter piece of rope is cut into two pieces. If one piece is z centimeters long, express the other length as an algebraic expression in z. 103) _____

A) (52 – z) cm B) (52 – 2z) cm C) (z + 52) cm D) (z – 52) cm

104) In the race for Student Body President, Jose received 248 more votes than Angela. If Angela received x votes, how many votes did Jose receive? 104) _____

A) (x – 248) votes B) (248 – x) votes C) (248x) votes D) (x + 248) votes

105) During a walk–a–thon, Rosilyn walked 7 fewer laps than June walked. If June walked b laps, how many laps did Rosilyn walk? 105) _____

A) (b + 7) laps B) (b – 7) laps C) (7 – b) laps D) $\left(\frac{b}{7}\right)$ laps

106) Suppose the regular price of a car is c dollars. Write a mathematical expression for the following: "I'll give you one–third off regular price." 106) _____

A) $c - \frac{1}{3}$ B) 3c C) $c \div \frac{1}{3}$ D) $\frac{1}{3}c$

107) Suppose Ella is x years of age. Write a mathematical expression for the following: "Ella's mother is three times the sum of Ella's age and 5. 107) _____

A) 3(x + 5) B) 3x – 5 C) x + 15 D) 3x + 5

Solve the problem.

108) Angles A and B are complementary angles. Determine the measures of angles A and B if angle B is 2 less than three times the size of angle A. 108) _____

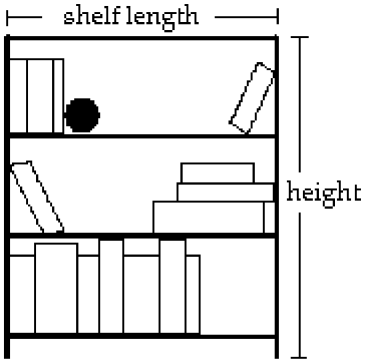
A) A = 31°; B = 59° B) A = 22°; B = 64° C) A = 23°; B = 67° D) A = 22°; B = 68°

109) The sum of the angles of a triangle is 180°. Find the three angles of the triangle if one angle is twice the smallest angle and the third angle is 24° greater than the smallest angle. 109) _____

A) 27°, 51°, 102° B) 39°, 78°, 63° C) 31°, 62°, 87° D) 27°, 54°, 99°

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110) A bookcase is to be constructed as shown in the figure below. The height of the bookcase is 3 feet longer than the length of a shelf. If 18 feet of lumber is available for the entire unit (including the she but NOT the back of the bookcase), find the length and height of the unit. 110) _____



A) length = 2 ft; height = 5 ft
B) length = 2 ft; height = 6 ft
C) length = 3 ft; height = 6 ft
D) length = 7.5 ft; height = 9 ft

111) An auto repair shop charged a customer $416 to repair a car. The bill listed $96 for parts and the remainder for labor. If the cost of labor is $40 per hour, how many hours of labor did it take to repair the car? 111) _____

A) 9 hr
B) 8.5 hr
C) 7 hr
D) 8 hr

112) After a 16% price reduction, a boat sold for $24,360. What was the boat's price before the reduction? (Round to the nearest cent, if necessary.) 112) _____

A) $29,000
B) $152,250.00
C) $28,257.60
D) $3897.60

113) Inclusive of a 7.5% sales tax, a diamond ring sold for $1827.50. Find the price of the ring before the tax was added. (Round to the nearest cent, if necessary.) 113) _____

A) $1690.44
B) $1964.56
C) $1700
D) $137.06

114) A 6–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. 114) _____

A) shorter piece: 1 ft; longer piece: 5 ft
B) shorter piece: 16 ft; longer piece: 18 ft
C) shorter piece: 6 ft; longer piece: 20 ft
D) shorter piece: 3 ft; longer piece: 18 ft

115) The president of a certain university makes three times as much money as one of the department heads. If the total of their salaries is $260,000, find each worker's salary. 115) _____

A) president's salary = $19,500; department head's salary = $6500
B) president's salary = $195,000; department head's salary = $65,000
C) president's salary = $65,000; department head's salary = $195,000
D) president's salary = $130,000; department head's salary = $65,000

116) The population of a town increased by 20% in 5 years. If the population is currently 23,000, find the population of this town 5 years ago. (Round to the nearest whole, if necessary.) 116) _____

A) 19,167
B) 18,400
C) 4600
D) 115,000

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117) The three most prominent buildings in a city, Washington Center, Lincoln Galleria, and Jefferson Square Tower, have a total height of 1800 feet. Find the height of each building if Jefferson Square Tower is four times as tall as Lincoln Galleria and Washington Center is 240 feet taller than Lincoln Galleria. 117) _____

A) Washington Center: 340 ft
Lincoln Galleria: 100 ft
Jefferson Square Tower: 1360 ft

B) Washington Center: 500 ft
Lincoln Galleria: 260 ft
Jefferson Square Tower: 1040 ft

C) Washington Center: 680 ft
Lincoln Galleria: 170 ft
Jefferson Square Tower: 950 ft

D) Washington Center: 400 ft
Lincoln Galleria: 100 ft
Jefferson Square Tower: 1300 ft

118) In a recent International Gymnastics competition, the U.S., China, and Romania were the big winners. If the total number of medals won by each team are three consecutive integers whose sum is 45 and the U.S. won more than China who won more than Romania, how many medals did each team win? 118) _____

A) U.S.: 16 medals; China: 15 medals; Romania: 14 medals
B) U.S.: 17 medals; China: 16 medals; Romania: 15 medals
C) U.S.: 14 medals; China: 13 medals; Romania: 12 medals
D) U.S.: 47 medals; China: 46 medals; Romania: 45 medals

119) Stephanie is a waitress and she is paid $2.86 per hour plus 15% of the total cost of the food and beverages she serves. If during a 4–hour shift she earns $200, what was the total cost of the food and beverages she served? 119) _____

A) $221.84 B) $163.97 C) $1409.60 D) $1257.07

120) Morgan goes out to lunch and only has $15. If she must pay 6% sales tax and wants to leave a 17% tip on the total bill (meal plus tax), what is the maximum price of the lunch she can order? 120) _____

A) $12.09 B) –$0.77 C) $15.40 D) $13.64

121) Two cars start from the same point and travel in the same direction. If one car is traveling 57 miles per hour and the other car is traveling at 53 miles per hour, how far apart will they be after 4.3 hours? 121) _____

A) 227.9 miles B) 473 miles C) 17.2 miles D) 245.1 miles

122) Two trains leave a train station at the same time. One travels east at 12 miles per hour. The other train travels west at 10 miles per hour. In how many hours will the two trains be 61.6 miles apart? 122) _____

A) 2.8 hours B) 1.4 hours C) 5.6 hours D) 3.3 hours

123) Ken and Kara are 30 miles apart on a calm lake paddling toward each other. Ken paddles at 5 miles per hour, while Kara paddles at 8 miles per hour. How long will it take them to meet? 123) _____

A) $1\frac{1}{2}$ hours B) $2\frac{4}{13}$ hours C) 10 hours D) 17 hours

124) A freight train leaves a station traveling at 32 km/h. Two hours later, a passenger train leaves the same station traveling in the same direction at 52 km/h. How long does it takes the passenger train to catch up to the freight train? 124) _____

A) 4.2 hours B) 3.2 hours C) 5.2 hours D) 2.2 hours

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125) Five friends drove at an average rate of 60 miles per hour to a weekend retreat. On the way home, they took the same route but averaged 70 miles per hour. What was the distance between home and the retreat if the round trip took 10 hours? 125) _____

A) $5\frac{5}{13}$ miles B) $646\frac{2}{13}$ miles C) 4200 miles D) $323\frac{1}{13}$ miles

126) Gary can hike on level ground 3 miles an hour faster than he can on uphill terrain. Yesterday, he hiked 38 miles, spending 2 hours on level ground and 5 hours on uphill terrain. Find his average speed on level ground. 126) _____

A) $7\frac{4}{7}$ mph B) $4\frac{4}{7}$ mph C) 8 mph D) $5\frac{3}{7}$ mph

127) During a hurricane evacuation from the east coast of Georgia, a family traveled 220 miles west. For part of the trip, they averaged 50 mph, but as the congestion got bad, they had to slow to 30 mph. If the total time of travel was 8 hours, how many miles did they drive at the reduced speed? 127) _____

A) 265 miles B) 270 miles C) 280 miles D) 275 miles

128) Richard works for a company that pays $24 per hour for the first forty hours and $36 per hour for each hour in the week worked above the 40 hours. If he earned $1500 this week, how many overtime hours did he work? 128) _____

A) 55 hours B) 15 hours C) 22.5 hours D) 14 hours

129) Jamie sells handcrafted dolls at local art fairs. She sells small dolls for $30 and large dolls for $40. At the end of the Little Town Art Fair, she determined that the total amount she made by selling 14 dolls was $470. Determine the number of small and the number of large dolls that she sold. 129) _____

A) 5 small, 9 large B) 6 small, 8 large C) 8 small, 6 large D) 9 small, 5 large

130) Kevin invested part of his $10,000 bonus in a certificate of deposit that paid 6% annual simple interest, and the remainder in a mutual fund that paid 11% annual simple interest. If his total interest for that year was $900, how much did Kevin invest in the mutual fund? 130) _____

A) $7000 B) $5000 C) $6000 D) $4000

131) How much pure acid should be mixed with 3 gallons of a 50% acid solution in order to get an 80% acid solution? 131) _____

A) 1.5 gal B) 4.5 gal C) 7.5 gal D) 12 gal

132) The owners of a candy store want to sell, for $6 per pound, a mixture of chocolate–covered raisins, which usually sells for $3 per pound, and chocolate–covered macadamia nuts, which usually sells for $8 per pound. They have a 50–pound barrel of the raisins. How many pounds of the nuts should they mix with the barrel of raisins so that they hit their target value of $6 per pound for the mixture? 132) _____

A) 70 lb B) 65 lb C) 80 lb D) 75 lb

133) The manager of a coffee shop has one type of coffee that sells for $5 per pound and another type that sells for $10 per pound. The manager wishes to mix 50 pounds of the $10 coffee to get a mixture that will sell for $7 per pound. How many pounds of the $5 coffee should be used? 133) _____

A) 37.5 lb B) 62.5 lb C) 125 lb D) 75 lb

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134) A chemist needs 70 milliliters of a 63% solution but has only 51% and 79% solutions available. Find how many milliliters of each that should be mixed to get the desired solution. 134) _____

A) 30 ml of 51%; 40 ml of 79%
B) 40 ml of 51%; 30 ml of 79%
C) 50 ml of 51%; 20 ml of 79%
D) 20 ml of 51%; 50 ml of 79%

135) A chemist needs 12 liters of a 50% salt solution. All she has available is a 20% salt solution and a 70% salt solution. How much of each of the two solutions should she mix to obtain her desired solution? 135) _____

A) 2.4 L of 20%; 9.6 L of 70%
B) 6 L of 20%; 6 L of 70%
C) 3.6 L of 20%; 8.4 L of 70%
D) 4.8 L of 20% ; 7.2 L of 70%

136) A beverage wholesaler wants to create a new punch. He will mix fruit juice worth $5 a gallon and rum worth $10 a gallon. He wants to obtain 135 gallons of punch worth $7 a gallon. How much of each beverage should he use? 136) _____

A) 94.5 gal of juice; 40.5 gal of rum
B) 81 gal of juice; 54 gal of rum
C) 108 gal of juice; 27 gal of rum
D) 121.5 gal of juice; 13.5 gal of rum

137) Max needs to drain his 12,000 gallon inground pool to put in a new liner. He has a pump that will drain 20 gallons per minute and the main pump will drain 40 gallons per minute. If both pumps are turned on at the same time and run until the pool is empty, how long will it take for the pool to be drained? 137) _____

A) 60 minutes = 10 hours
B) 200 minutes = $3\frac{1}{3}$ hours
C) $3\frac{1}{3}$ minutes
D) 300 minutes = 5 hours

138) Chelsea works two part time jobs. One job pays $6.75 per hour and the other pays $9.25 per hour. Last week Chelsea worked for 22 hours and earned $183.50. How many hours did she work at each job. 138) _____

A) 10 hours at $6.75 per hour and 12 hours at $9.25 per hour
B) 11.5 hours at $6.75 per hour and 10.5 hours at $9.25 per hour
C) 8 hours at $6.75 per hour and 14 hours at $9.25 per hour
D) 14 hours at $6.75 per hour and 8 hours at $9.25 per hour

Solve the inequality.

139) $a + 1 < -4$ 139) _____

A) $a < -3$ B) $a > -5$ C) $a < -5$ D) $a > -3$

140) $2x + 1 < 9$ 140) _____

A) $x > 1$ B) $x > 4$ C) $x < 1$ D) $x < 4$

141) $8z + 4 > 7z - 2$ 141) _____

A) $z > 2$ B) $z > -6$ C) $z < -6$ D) $z < 2$

142) $8c + 1 \leq 7c + 6$ 142) _____

A) $c \geq 5$ B) $c \leq 5$ C) $c < 5$ D) $c \geq 7$

143) $8 - 3x - 5 \geq -4x - 8$ 143) _____

A) $x > -3$ B) $x \leq -11$ C) $x < -3$ D) $x \geq -11$

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144) $8 - 2(3 - x) \leq 0$ 144) _____

A) $x < -1$ B) $x \geq -1$ C) $x \leq -1$ D) $x \leq 0$

145) $-9x - 15 \leq -3(2x + 10)$ 145) _____

A) $x \geq 5$ B) $x > 5$ C) $x < 5$ D) $x \leq 5$

Solve the problem.

146) Shaundra has $7.35 to make a long distance call at a pay phone.The rates listed on the phone for a long distance call are $1.40 for the first three minutes and $0.35 for each additional minute or portion of a minute. Find the maximum number of minutes Shaundra can stay on the line. 146) _____

A) 5 minutes B) 20 minutes C) 17 minutes D) 21 minutes

147) Michael scored 70, 75, and 97 on three algebra tests. What must he score on the fourth test in order to have an average grade of at least 85? 147) _____

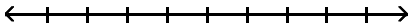
A) 28 B) 81 C) 98 D) 61

148) Greg is opening a car wash. He estimates his cost equation as $C = 6000 + 0.06x$ and his revenue equation as $R = 1.7x$, where x is the number of cars washed in a six month period. Find the minimum number of cars that need to be washed in a six month period to make a profit. 148) _____

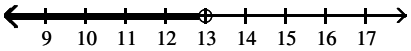
A) 366 cars B) 2659 cars C) 3659 cars D) 36,586 cars

Solve the inequality and graph the solution on the number line.

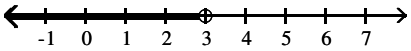
149) $a + 5 < 8$ 149) _____



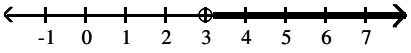
A)



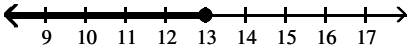
B)



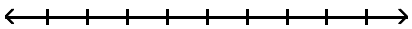
C)



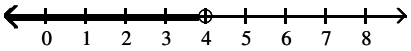
D)



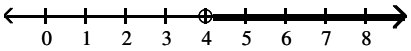
150) $2x + 6 < 14$ 150) _____



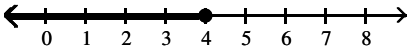
A)



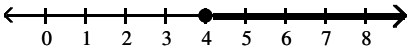
B)



C)

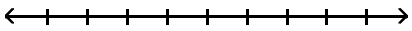


D)

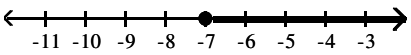


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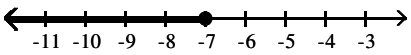
151) $6z + 1 > 5z - 6$ 151) _____



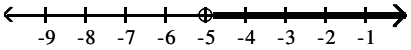
A)



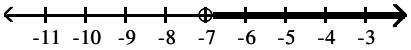
B)



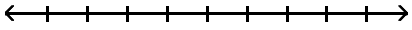
C)



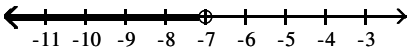
D)



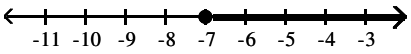
152) $8c - 1 \leq 7c - 8$ 152) _____



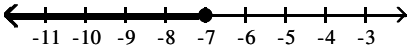
A)



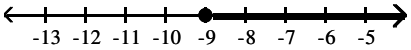
B)



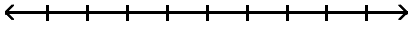
C)



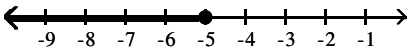
D)



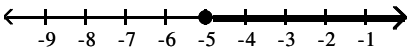
153) $11 - 3(3 - x) \leq -13$ 153) _____



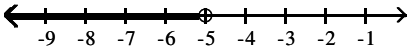
A)



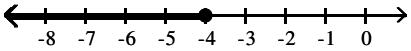
B)



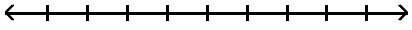
C)



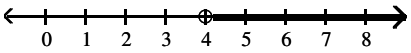
D)



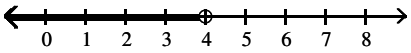
154) $-28r - 20 \leq -4(6r + 9)$ 154) _____



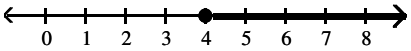
A)



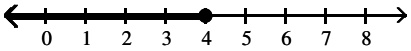
B)



C)

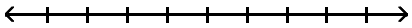


D)

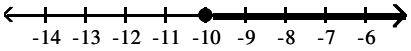


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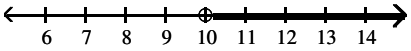
155) $\frac{x}{2} \geq 4 + \frac{x}{10}$ 155) _____



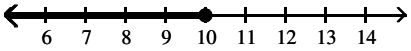
A)



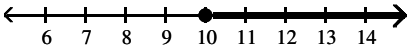
B)



C)



D)



Solve the inequality and give the solution in interval notation.

156) $a - 6 < -7$ 156) _____

A) $(-\infty, -13)$ B) $(-\infty, -13]$ C) $(-1, \infty)$ D) $(-\infty, -1)$

157) $4x + 8 < 20$ 157) _____

A) $[3, \infty)$ B) $(-\infty, 3)$ C) $(3, \infty)$ D) $(-\infty, 3]$

158) $7z + 3 > 6z + 9$ 158) _____

A) $[6, \infty)$ B) $(6, \infty)$ C) $(-\infty, 6]$ D) $(12, \infty)$

159) $3c + 5 \leq 2c - 2$ 159) _____

A) $[3, \infty)$ B) $[-7, \infty)$ C) $(-\infty, -7]$ D) $(-\infty, -7)$

160) $8 - 2(3 - x) \leq -14$ 160) _____

A) $[-8, \infty)$ B) $(-\infty, -8)$ C) $(-\infty, -7]$ D) $(-\infty, -8]$

161) $-21r - 15 \leq -3(6r + 7)$ 161) _____

A) $(-\infty, 2)$ B) $[2, \infty)$ C) $(-\infty, 2]$ D) $(2, \infty)$

162) $\frac{x}{3} \geq 2 + \frac{x}{9}$ 162) _____

A) $(-\infty, 9]$ B) $[9, \infty)$ C) $[-9, \infty)$ D) $(9, \infty)$

163) $\frac{x - 3}{15} \geq \frac{x - 1}{18} + \frac{1}{90}$ 163) _____

A) $(14, \infty)$ B) $[14, \infty)$ C) $(-\infty, 14]$ D) $(-\infty, 14)$

Find the solution set for the inequality.

164) $a + 2 < 9$ 164) _____

A) $\{a \mid a < 7\}$ B) $\{a \mid a > 11\}$ C) $\{a \mid a < 11\}$ D) $\{a \mid a > 7\}$

165) $4x + 10 < 30$ 165) _____

A) $\{x \mid x < 5\}$ B) $\{x \mid x < 10\}$ C) $\{x \mid x > 10\}$ D) $\{x \mid x > 5\}$

166) $3z + 1 > 2z + 7$ 166) _____

A) $\{z \mid z > 8\}$ B) $\{z \mid z < 8\}$ C) $\{z \mid z > 6\}$ D) $\{z \mid z < 6\}$

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167) $-2c + 1 \le -3c - 5$ 167) _____

A) $\{c \mid c < -6\}$ B) $\{c \mid c \ge -6\}$ C) $\{c \mid c \ge -4\}$ D) $\{c \mid c \le -6\}$

168) $4 + 8x + 5 \ge 7x + 13$ 168) _____

A) $\{x \mid x < 8\}$ B) $\{x \mid x \ge 4\}$ C) $\{x \mid x \le 4\}$ D) $\{x \mid x > 8\}$

169) $8 - 3(2 - x) \le 5$ 169) _____

A) $\{x \mid x < 1\}$ B) $\{x \mid x \ge 1\}$ C) $\{x \mid x \le 1\}$ D) $\{x \mid x \le 2\}$

170) $-30x - 25 \le -5(5x + 7)$ 170) _____

A) $\{x \mid x \le 2\}$ B) $\{x \mid x \ge 2\}$ C) $\{x \mid x < 2\}$ D) $\{x \mid x > 2\}$

171) $\frac{9}{20}(x + 2) > \frac{1}{4}(x + 5)$ 171) _____

A) $\{x \mid x < -\frac{7}{4}\}$ B) $\{x \mid x > \frac{7}{4}\}$ C) $\{x \mid x < \frac{7}{4}\}$ D) $\{x \mid x > -\frac{7}{4}\}$

172) $\frac{x + 1}{6} - \frac{1}{27} > \frac{x + 6}{9}$ 172) _____

A) $\{x \mid x > \frac{29}{3}\}$ B) $\{x \mid x > \frac{47}{3}\}$ C) $\{x \mid x < \frac{29}{3}\}$ D) $\{x \mid x < \frac{5}{3}\}$

Solve the inequality and give the solution in interval notation.

173) $-5 < x - 1 \le 8$ 173) _____

A) $[-6, 7)$ B) $[-4, 9)$ C) $(-4, 9]$ D) $(-6, 7]$

174) $15 \le 3x + 3 \le 24$ 174) _____

A) $(-7, -4)$ B) $(4, 7)$ C) $[-7, -4]$ D) $[4, 7]$

175) $-18 \le -2x - 4 < -12$ 175) _____

A) $[-7, -4)$ B) $(4, 7]$ C) $[4, 7)$ D) $(-7, -4]$

176) $7 \le \frac{3}{2}x + 4 < 16$ 176) _____

A) $[2, 3)$ B) $(2, 3]$ C) $[2, 8)$ D) $(2, 8]$

177) $9x + 8 \ge 3$ and $3x - 2 < 6$ 177) _____

A) $[-\frac{5}{9}, \frac{8}{3})$ B) $(-\frac{5}{9}, \frac{4}{3}]$ C) $[-\frac{5}{9}, \frac{4}{3})$ D) $(-\frac{5}{9}, \frac{8}{3}]$

Solve the inequality and give the solution set.

178) $0 \le \frac{3x + 1}{2} < 3$ 178) _____

A) $\{x \mid -\frac{1}{3} \le x \le \frac{5}{3}\}$ B) $\{x \mid -\frac{1}{3} \le x < \frac{5}{3}\}$ C) $\{x \mid -\frac{1}{3} < x \le \frac{5}{3}\}$ D) $\{x \mid -\frac{1}{3} < x < \frac{5}{3}\}$

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179) $\frac{1}{3} < \frac{-x-2}{3} < 3$ 179) _____

A) $\{x \mid 3 < x < 11\}$ B) $\{x \mid -11 < x < -11\}$

C) $\{x \mid -11 < x < -\frac{19}{9}\}$ D) $\{x \mid -11 < x < -3\}$

180) $-8 < \frac{-2(5-x)}{7} < \frac{5}{4}$ 180) _____

A) $\{x \mid -\frac{75}{8} < x < 23\}$ B) $\{x \mid -\frac{45}{2} < x < 23\}$

C) $\{x \mid -23 < x < \frac{75}{8}\}$ D) $\{x \mid -23 < x < \frac{45}{2}\}$

181) $x \le 2$ and $x \ge -2$ 181) _____

A) $\{x \mid -2 < x < 2\}$ B) $\{x \mid x \le -2\}$ C) $\{x \mid -2 \le x \le 2\}$ D) $\{\ \}$

182) $x \le 2$ and $x \ge 4$ 182) _____

A) $\{x \mid x \le 2\}$ B) $\{x \mid 2 \le x \le 4\}$ C) $\{x \mid 2 < x < 4\}$ D) $\{\ \}$

183) $x + 3 \le 5$ and $x + 3 > -6$ 183) _____

A) $\{x \mid -9 \le x < 2\}$ B) $\{x \mid -3 < x \le 8\}$ C) $\{x \mid -3 \le x < 8\}$ D) $\{x \mid -9 < x \le 2\}$

Solve the problem.

184) The water acidity in a pool is considered normal when the average pH reading of three daily measurements is greater than 7.2 and less than 7.8. If the first two pH reading are 7.25 and 7.85, find the range of pH values for the third reading that will result in the acidity level being normal. 184) _____

A) $7.7 < x < 9.5$ B) $6.5 < x < 8.3$ C) $7.2 < x < 7.8$ D) $7.1 < x < 8.9$

185) Ashley's grades on her first 3 exams are 85, 78, and 77. An average greater than or equal to 80 and less than 90 will result in a final grade of B. What range of grades on Ashley's fourth and final exam will result in a final grade of B? The maximum grade is 100. 185) _____

A) $80 \le x < 120$ B) $80 \le x \le 100$

C) $70 \le x \le 90$ D) Impossible to get a B.

186) A velocity ≥ 0 indicates that the object is traveling upward and a velocity ≤ 0 indicates that the object is traveling downward. An object is projected upward and $v(t) = -32t + 160$, $0 \le t \le 10$. Determine the interval when the object is traveling upward. 186) _____

A) [0, 4] B) [0, 32] C) [0, 5] D) [5, 10]

187) A velocity ≥ 0 indicates that the object is traveling upward and a velocity ≤ 0 indicates that the object is traveling downward. An object is projected upward and $v(t) = -9t + 42.3$, $0 \le t \le 12$. Determine the interval when the object is traveling downward. 187) _____

A) [4.7, 9] B) [4.7, 12] C) [0, 4.7] D) [3.7, 7.7]

Find the solution set for the inequality.

188) $x \le 5$ or $x \ge 2$ 188) _____

A) $\{x \mid 2 < x < 5\}$ B) $\{x \mid 2 \le x \le 5\}$

C) $\{x \mid x \le 2 \text{ or } x \ge 5\}$ D) $\mathbb{R}$

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189) $x \le -3$ or $x \ge 2$ 189) _____

A) $\{x \mid -3 \le x \le 2\}$ B) $\{x \mid -3 < x < 2\}$

C) $\{x \mid x \le -3 \text{ or } x \ge 2\}$ D) $\mathbb{R}$

190) $8x - 6 \le 42$ or $-x + 4 < -5$ 190) _____

A) $\{x \mid x \le \frac{9}{2} \text{ or } x > 9\}$ B) $\{x \mid \frac{9}{2} \le x < 9\}$

C) $\{x \mid 6 \le x < 9\}$ D) $\{x \mid x \le 6 \text{ or } x > 9\}$

Solve the inequality and give the solution in interval notation.

191) $x + 5 < 3$ or $-5x < -15$ 191) _____

A) $(-\infty, -2) \cup (3, \infty)$ B) $(-2, 3)$ C) $(-\infty, \infty)$ D) $(-\infty, 3)$

192) $-8x > -32$ or $x + 8 > 7$ 192) _____

A) $(-\infty, -1) \cup (4, \infty)$ B) $(-1, \infty)$ C) $(-1, 4)$ D) $(-\infty, \infty)$

193) $9x - 9 > 36$ or $-x + 7 \ge -4$ 193) _____

A) $[5, 11)$ B) $(5, \infty)$ C) $(5, 11]$ D) $(-\infty, \infty)$

Solve the problem.

194) An Algebra class had 5 tests over the course of the semester. The table gives the average and high sc 194) _____
for each of the 5 tests.

	Ave.	High
Test 1	72	100
Test 2	83	95
Test 3	67	97
Test 4	73	100
Test 5	66	91

For what tests was the high score greater than 97 or the average greater than 80.

A) None B) Test 1, Test 4

C) Test 1, Test 2, Test 4 D) Test 1, Test 2, Test 3, Test 4

195) An Algebra class had 5 tests over the course of the semester. The table gives the average and high sc 195) _____
for each of the 5 tests.

	Ave.	High
Test 1	75	100
Test 2	81	95
Test 3	67	97
Test 4	76	100
Test 5	66	92

For what tests was the high score less than 96 or the average less than 70.

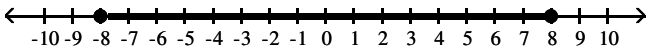
A) Test 2, Test 3, Test 5 B) Test 1, Test 4

C) Test 3 D) Test 2, Test 5

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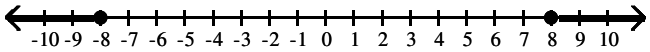
Provide an appropriate response.

196) The graph of the solution to _____ on the number line is 196) _____



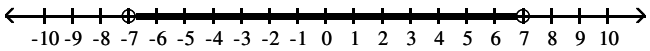
A) $|x| \le 8$ B) $|x| \ge 8$ C) $|x| > 8$ D) $|x| < 8$

197) The graph of the solution to _____ on the number line is 197) _____



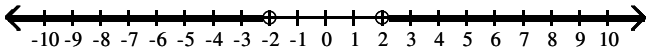
A) $|x| \le 8$ B) $|x| < 8$ C) $|x| \ge 8$ D) $|x| > 8$

198) The graph of the solution to _____ on the number line is 198) _____



A) $|x| > 7$ B) $|x| \ge 7$ C) $|x| < 7$ D) $|x| \le 7$

199) The graph of the solution to _____ on the number line is 199) _____



A) $|x| \ge 2$ B) $|x| \le 2$ C) $|x| < 2$ D) $|x| > 2$

Find the solution set for the equation.

200) $|x| = 12$ 200) _____

A) {144} B) {12} C) {–12} D) {–12, 12}

201) $|r - 1| = 7$ 201) _____

A) {–8} B) {–6, 8} C) {6, 8} D) ∅

202) $|t - 5| = 0$ 202) _____

A) {0} B) {5} C) {–5} D) {–5, 5}

203) $|5m + 3| = 9$ 203) _____

A) $\{\frac{6}{5}, -\frac{12}{5}\}$ B) {2, – 4} C) $\{-\frac{6}{5}, \frac{12}{5}\}$ D) ∅

204) $|5m + 2| + 2 = 8$ 204) _____

A) $\{\frac{4}{5}, -\frac{8}{5}\}$ B) {2, – 4} C) $\{-\frac{4}{5}, \frac{8}{5}\}$ D) ∅

205) $\left|\frac{7y + 21}{3}\right| = 7$ 205) _____

A) {6, 0} B) {–6, 0} C) {–6, 6} D) ∅

206) $|2(x + 1) + 4| = 10$ 206) _____

A) {–8, 0} B) {–6, 4} C) {–8, 2} D) {–6, 0}

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207) $3 + \left|\frac{2 - x}{2}\right| = 5$ 207) _____

A) {–2, 2} B) {–2, 6} C) {–6, 6} D) {–6, 2}

208) $|3(4x + 5)| = 0$ 208) _____

A) $\{-\frac{5}{4}\}$ B) $\{-\frac{1}{5}\}$ C) $\{-\frac{5}{12}\}$ D) $\{\frac{5}{4}\}$

Find the solution set for the inequality.

209) $|x| < 1$ 209) _____

A) $\{x \mid x < -1 \text{ or } x > 1\}$ B) $\{x \mid x > 1 \text{ and } x < -1\}$

C) $\{x \mid 0 \le x < 1\}$ D) $\{x \mid -1 < x < 1\}$

210) $|r - 8| < 9$ 210) _____

A) $\{r \mid r < -1 \text{ or } r > 17\}$ B) $\{r \mid -17 < r < 1\}$

C) $\{r \mid -1 < r < 17\}$ D) $\{r \mid r < -17 \text{ or } r > 1\}$

211) $|5m + 4| < 7$ 211) _____

A) $\{m \mid m < -\frac{11}{5} \text{ or } m > \frac{3}{5}\}$ B) $\{m \mid -\frac{3}{5} < m < \frac{11}{5}\}$

C) $\{m \mid -\frac{11}{5} < m < \frac{3}{5}\}$ D) $\{m \mid m < -\frac{3}{5} \text{ or } m > \frac{11}{5}\}$

212) $|4m + 5| + 9 \le 12$ 212) _____

A) $\{m \mid m \le -2 \text{ or } m \ge -\frac{1}{2}\}$ B) $\{m \mid m \le \frac{1}{2} \text{ or } m \ge 2\}$

C) $\{m \mid \frac{1}{2} \le m \le 2\}$ D) $\{m \mid -2 \le m \le -\frac{1}{2}\}$

213) $\left|\frac{11y + 44}{4}\right| < 11$ 213) _____

A) $\{y \mid y < -8 \text{ or } y > 0\}$ B) $\{y \mid -8 < y < 0\}$

C) $\{y \mid -8 < y < 8\}$ D) $\{y \mid 0 < y < 8\}$

214) $|2(x + 1) + 6| \le 8$ 214) _____

A) $\{x \mid -6 \le x \le 2\}$ B) $\{x \mid x \le -8 \text{ or } x \ge 0\}$

C) $\{x \mid -8 \le x \le 0\}$ D) $\{x \mid x \le -6 \text{ or } x \ge 2\}$

215) $3 + \left|\frac{2 - x}{2}\right| < 5$ 215) _____

A) $\{x \mid x < -2 \text{ or } x > 6\}$ B) $\{x \mid -2 < x < 2\}$

C) $\{x \mid -6 < x < 2\}$ D) $\{x \mid -2 < x < 6\}$

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Solve the problem.

216) A landscaping company sells 30–pound bags of top soil. The actual weight x of a bag, however, may differ from the advertised weight by as much as 0.5 pound. The actual weight of the bag of topsoil, x, can be described by the inequality $|x - 30| \le 0.5$. Give the solution of the inequality in interval notation. 216) _____

A) [29.5, 30.5]
B) (29.5, 30.5)
C) $(-\infty, 29.5] \cup [30.5, \infty)$
D) [–29.5, 30.5]

217) A landscaping company sells mulch by the cubic yard. They use a tractor with one yard bucket to put the mulch into trucks or trailers. The actual amount x in each scoop, however, may differ from one cubic yard by as much as 0.21 yard. The actual amount x in each scoop, can be described by the inequality $|x - 0.21| \le 1$. What is the largest amount of mulch you might get when purchasing one cubic yard. 217) _____

A) 1.21 cubic yd
B) 1.42 cubic yd
C) 0.79 cubic yd
D) 1 cubic yd

Find the solution set for the inequality.

218) $|x| > 6$ 218) _____

A) $\{x \mid x < -6 \text{ or } x > 6\}$
B) $\{x \mid x > 6 \text{ and } x < -6\}$
C) $\{x \mid -6 < x < 6\}$
D) $\{x \mid 0 \le x < 6\}$

219) $|r + 6| > 7$ 219) _____

A) $\{r \mid r < -1 \text{ or } r > 13\}$
B) $\{r \mid -1 < r < 13\}$
C) $\{r \mid -13 < r < 1\}$
D) $\{r \mid r < -13 \text{ or } r > 1\}$

220) $|6m + 9| > 5$ 220) _____

A) $\{m \mid \frac{2}{3} < m < \frac{7}{3}\}$
B) $\{m \mid m < \frac{2}{3} \text{ or } m > \frac{7}{3}\}$
C) $\{m \mid -\frac{7}{3} < m < -\frac{2}{3}\}$
D) $\{m \mid m < -\frac{7}{3} \text{ or } m > -\frac{2}{3}\}$

221) $|3m + 5| + 2 \ge 10$ 221) _____

A) $\{m \mid m \le -1 \text{ or } m \ge \frac{13}{3}\}$
B) $\{m \mid m \le -\frac{13}{3} \text{ or } m \ge 1\}$
C) $\{m \mid -\frac{13}{3} \le m \le 1\}$
D) $\{m \mid -1 \le m \le \frac{13}{3}\}$

222) $\left|\frac{2y + 6}{3}\right| > 2$ 222) _____

A) $\{y \mid -6 < y < 0\}$
B) $\{y \mid -6 < y < 6\}$
C) $\{y \mid y < 0 \text{ or } y > 6\}$
D) $\{y \mid y < -6 \text{ or } y > 0\}$

223) $|2(x + 1) + 4| \ge 10$ 223) _____

A) $\{x \mid x \le -8 \text{ or } x \ge 2\}$
B) $\{x \mid x \le -6 \text{ or } x \ge 4\}$
C) $\{x \mid -8 \le x \le 2\}$
D) $\{x \mid -6 \le x \le 4\}$

224) $8 + \left|\frac{2 - x}{2}\right| > 10$ 224) _____

A) $\{x \mid x < -2 \text{ or } x > 6\}$
B) $\{x \mid -2 < x < 6\}$
C) $\{x \mid x < -6 \text{ or } x > 2\}$
D) $\{x \mid -2 < x < 2\}$

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Solve the inequality and give the solution set.

225) $|x| < -6$ 225) _____

A) $\varnothing$ B) C) $\{x \mid -6 < x < 6\}$ D) $\{-6\}$

226) $|x| > -7$ 226) _____

A) $\{7\}$ B) $\varnothing$ C) $\{x \mid -7 < x < 7\}$ D)

227) $|2x - 8| - 5 < -14$ 227) _____

A) $\{x \mid x < -\frac{1}{2} \text{ or } x > \frac{17}{2}\}$ B) $\varnothing$

C) $\{x \mid -\frac{1}{2} < x < \frac{17}{2}\}$ D)

228) $|7x + 2| + 7 > 4$ 228) _____

A) $\{x \mid x < -\frac{5}{7} \text{ or } x > \frac{1}{7}\}$ B) $\varnothing$

C) D) $\{x \mid -\frac{5}{7} < x < \frac{1}{7}\}$

229) $|x - 1| \le 0$ 229) _____

A) $\{0\}$ B) $\{t \mid -1 \le x \le 1\}$ C) $\{1\}$ D) $\{-1\}$

230) $|x + 9| \ge 0$ 230) _____

A) B) $\{-9\}$ C) $\{t \mid 9 \le x \le -9\}$ D) $\{9\}$

231) $|x - 4| > 0$ 231) _____

A) $\{x \mid -4 < x < 4\}$ B)

C) $\{x \mid x < 4 \text{ or } x > 4\}$ D) $\varnothing$

232) $|x + 9| < 0$ 232) _____

A) $\{x \mid x < -9 \text{ or } x > -9\}$ B) $\{x \mid -9 < x < 9\}$

C) D) $\varnothing$

Find the solution set for the inequality.

233) $|7x - 8| \ge 0$ 233) _____

A) $\left\{x \mid x \le -\frac{8}{7} \text{ or } x \ge \frac{8}{7}\right\}$ B) $\left\{x \mid -\frac{8}{7} \le x \le \frac{8}{7}\right\}$

C) $\varnothing$ D)

234) $\left|\frac{8x - 2}{3}\right| < 0$ 234) _____

A) $\varnothing$ B) $\left\{x \mid x \le -\frac{1}{4} \text{ or } x \ge \frac{1}{4}\right\}$

C) $\left\{x \mid -\frac{1}{4} \le x \le \frac{1}{4}\right\}$ D)

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Find the solution set for the equation.

235) $|7s - 8| = |s + 7|$ 235) _____

A) $\{\frac{5}{2}, -\frac{23}{8}\}$ B) $\{\frac{5}{2}, \frac{1}{8}\}$ C) $\{-\frac{5}{2}, -\frac{1}{8}\}$ D) $\varnothing$

236) $|n - 7| = |8 - n|$ 236) _____

A) {15} B) $\{\frac{15}{2}\}$ C) $\{-\frac{2}{15}\}$ D) $\varnothing$

237) $|\frac{1}{2}n + 2| = |\frac{3}{4}n - 2|$ 237) _____

A) {10} B) {16, 0} C) {16, 12} D) $\varnothing$

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

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

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

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

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201) B
202) B
203) A
204) A
205) B
206) C
207) B
208) A
209) D
210) C
211) C
212) D
213) B
214) C
215) D
216) A
217) A
218) A
219) D
220) D
221) B
222) D
223) A
224) A
225) A
226) D
227) B
228) C
229) C
230) A
231) C
232) D
233) D
234) A
235) B
236) B
237) B

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