Exam

Name_____

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

Solve the equation.

1) $a + 2 = 7$

A) - 5 B) - 9 C) 5 D) 9

1) _____

2) $8 = b + 3$

A) 11 B) - 5 C) - 11 D) 5

2) _____

3) $a - 8 = 6$

A) 2 B) -14 C) -2 D) 14

3) _____

4) $d + 12 = -28$

A) -16 B) - 40 C) 40 D) 16

4) _____

5) $- 25 = 24 + f$

A) -1 B) - 49 C) 49 D) 1

5) _____

6) $g + 28.14 = 0$

A) 29.14 B) 28.14 C) - 28.14 D) - 29.14

6) _____

7) $-6 = b - 9$

A) 3 B) -3 C) 15 D) -15

7) _____

8) $- 21.7 - k = 18.9$

A) - 40.6 B) 2.8 C) 40.6 D) -2.8

8) _____

9) $g - 27.22 = 0$

A) - 27.22 B) 26.22 C) 27.22 D) - 26.22

9) _____

10) t - 1 = 11
A) -10 B) 12 C) -12 D) 10
10) _____

11) 5x = 15
A) 3 B) 10 C) 2 D) 9
11) _____

12) 7m = 49
A) 7 B) 6 C) 42 D) 41
12) _____

13) 18 = 2k
A) 15 B) 8 C) 16 D) 9
13) _____

14) 13.8 = 2.3c
A) 10.5 B) 5 C) 6 D) 11.5
14) _____

15) 3.92x = 17.248
A) 4.4 B) 12.128 C) 13.328 D) 3.4
15) _____

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

A) 2 B) 7 C) 10 D) 6

17) $\frac{x}{8} = 3$ 17) _____

A) 24 B) 5 C) 11 D) 10

18) $\frac{3}{7}z = 24$ 18) _____

A) 21 B) 9 C) 24 D) 56

19) $\frac{4}{5} = 36y$ 19) _____

A) $\frac{1}{4}$ B) $\frac{1}{36}$ C) $\frac{1}{5}$ D) $\frac{1}{45}$

20) $4.7 = \frac{b}{7}$ 20) _____

A) 32.9 B) 10.7 C) 31.9 D) 11.7

21) $2r + 3 = 23$
A) 22 B) 8 C) 18 D) 10
21) _____

22) $4n - 2 = 38$
A) 10 B) 36 C) 11 D) 40
22) _____

23) $7 = 3x - 8$
A) 12 B) 5 C) 16 D) 10
23) _____

24) $35 = 7x + 7$
A) 2 B) 21 C) 4 D) 25
24) _____

25) $161 = 13x + 18$
A) 130 B) 134 C) 11 D) 5
25) _____

26) $\frac{x}{3} + 3 = 10$ 26) _____

A) 41 B) 10 C) 21 D) 39

27) $10 + 7p = 3$
A) - 1 B) $1\frac{5}{7}$ C) $1\frac{6}{7}$ D) 1

27) _____

28) $6 = \frac{w}{9} - 8$ 28) _____

A) 126 B) 5 C) 4 D) 129

29) $\frac{1}{2}x + \frac{3}{5} = \frac{9}{10}$ 29) _____

A) $1\frac{1}{2}$ B) $\frac{3}{5}$ C) $\frac{3}{10}$ D) 3

30) 6.6x + 2 = 48.2
A) 8 B) 4.6 C) 14 D) 7
30) _____

31) 4z + 19 = 3z + 6
A) 25 B) 13 C) -25 D) -13
31) _____

32) 7x - 6x = 19
A) -19 B) 19 C) $-\frac{1}{19}$ D) 0
32) _____

33) 10y = 7y + 7 + 2y
A) 70 B) -7 C) -70 D) 7
33) _____

34) - 5a + 5 + 6a = 11 - 26
A) 20 B) -20 C) -42 D) 42
34) _____

35) 11x - 4x + x = 40
A) $\frac{1}{5}$ B) 25 C) 10 D) 5
35) _____

36) - 8b + 6 + 6b = -3b + 11
A) -11 B) 11 C) -6 D) 5
36) _____

37) 7.8m + 3m - m = 29.4
A) 7.8 B) 3.0 C) 30 D) 9.8
37) _____

38) $\frac{3}{4}x - \frac{1}{8}x = 0.875$ 38) _____

A) $\frac{5}{7}$ B) $1\frac{1}{4}$ C) $1\frac{2}{5}$ D) $1\frac{1}{3}$

39) p + 5.7 = 6.21
A) 0.51 B) 0.71 C) 11.91 D) 11.41
39) _____

40) s - 0.0127 = 0.031
A) -0.0063 B) 0.0437 C) 0.0183 D) 0.0383
40) _____

41) y + 0.0398 = 0.0654
A) 0.0456 B) 0.0256 C) 0.0552 D) 0.1052
41) _____

42) s - 1.3 = 2.1
A) 0.8 B) 3.4 C) 3.1 D) 1
42) _____

43) 6(x - 7) = 8(x - 11)
A) 46 B) 23 C) 65 D) 130
43) _____

44) 4(x + 6) = 6(x + 2.2)
A) 21.6 B) 10.8 C) 18.6 D) 5.4
44) _____

Write the phrase as a mathematical expression. Use x as the variable.
45) 9 less than a number
A) 9 B) x - 9 C) x - (-9) D) 9 - x
45) _____

46) The sum of a number and 11
A) x + 11 B) $\frac{x + 11}{2}$ C) 11x D) x - 11
46) _____

47) 71 added to a number
A) 71x B) 71 + x C) 71 - x D) 71
47) _____

48) Some number increased by 146
A) x - 146 B) x + 146 C) 146x D) 146
48) _____

49) The sum of 8.66 and x
A) 8.66 B) 8.66 - x C) 8.66x D) 8.66 + x
49) _____

50) Some number minus 140
A) 140 B) 140x C) x + 140 D) x - 140
50) _____

51) The difference of some number and 4.7
A) x + 4.7 B) 4.7 C) 4.7x D) x - 4.7
51) _____

52) 144 fewer than some number
A) 144 B) 144x C) x - 144 D) x + 144
52) _____

53) 6 times some number
A) 6x B) 6 + x C) $\frac{6}{x}$ D) 6 - x
53) _____

54) The product of 17 and some number
A) $\frac{17}{x}$ B) 17 + x C) 17x D) 17 - x
54) _____

55) Some number multiplied by 7.74
A) 7.74 + x B) 7.74 - x C) 7.74x D) $\frac{7.74}{x}$ 55) _____

56) Twice some number
A) 2x B) 2 - x C) 2 + x D) $\frac{2}{x}$ 56) _____

57) Some number divided by 15
A) $\frac{x}{15}$ B) 15 - x C) 15x D) 15 + x
57) _____

58) The quotient of some number and 70
A) 70 + x B) 70 - x C) $\frac{x}{70}$ D) 70x
58) _____

59) 409 divided by some number

A) 409 + x B) 409 - x C) $\frac{409}{x}$ D) 409x

59) _____

60) The product of 8.8 and the sum of a number and 5

A) 8.8(x - 5) B) 5(x - 8.8) C) 5(x + 8.8) D) 8.8(x + 5)

60) _____

61) One-third of a number added to the difference of the number and 6

A) $\frac{1}{3}$x + (x - 6) B) $\frac{x-6}{3x}$ C) $\frac{x-6}{3}$ D) $\frac{1}{3}$x + (6 - x) 61) _____

62) The quotient of 8 less than a number and 5 more than the number

A) (x - 8) + (x + 5) B) $\frac{x-8}{x+5}$ C) $\frac{x+8}{x-5}$ D) $\frac{8}{5}$x 62) _____

Translate the statement into a mathematical expression.

63) An employee's salary, s, is increased by $480.

A) s - 480 B) 480s C) s + 480 D) 480

63) _____

64) A salesperson drove 6 hours. How long will he have driven t hours later?

A) 6 B) 6t C) 6 + t D) 6 - t

64) _____

65) There were 50 men and women at a meeting. If m of them were men, how many were women?

A) 50 - m B) $\frac{m}{50}$ C) 50 + m D) 50m

65) _____

66) Find the value of x $20-bills.

A) x - 20 B) $\frac{20}{x}$ C) 20x D) 20 + x

66) _____

67) Find the cost of 4 beds at b dollars each.

A) 4b B) 4 - b C) $\frac{4}{b}$ D) 4 + b

67) _____

68) A community theater collected $1945 by selling t tickets. Find the cost of each ticket.

A) 1945t B) $\frac{t}{1945}$ C) $\frac{1945}{t}$ D) 1945 + t

68) _____

Solve the problem.

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

A) 5 B) 7.2 C) 0.6 D) 7

69) _____

70) When 5 times a number is subtracted from 7 times the number, the result is 14. Find the number.

A) 9 B) 2 C) 7 D) 14

70) _____

71) If 5 times a number is added to -4, the result is 9 times the number. Find the number.

A) -10 B) 1 C) -1 D) 10

71) _____

72) At a garage sale, the most expensive item was marked $24.00 more than the cheapest item. The sum of the two items was $25.85. Find the cost of the least expensive item. 72) _____

A) $21.15 B) $25.85 C) $3.70 D) $1.85

73) At a movie theater, 16 more people attended the early show than the late show. There were 236 people who saw the movie that night. How many people attended the late show? 73) _____

A) 252 B) 110 C) 126 D) 220

74) A hardware store spent $12,125 on print and TV advertising last year. If $\frac{2}{5}$ of that amount was spent on print advertising, how much was spent on TV advertising? 74) _____

A) $16,975 B) $7275 C) $4850 D) $12,125

75) A woman has $3.05 in dimes and nickels. She has 8 more dimes than nickels. How many nickels does she have?

75) _____

A) 23 B) 15 C) 38 D) 17

76) A cashier has a total of 132 bills, made up of fives and tens. The total value of the money is $890. How many ten-dollar bills does the cashier have? 76) _____

A) 23 B) 46 C) 86 D) 69

A formula is given, along with values for all but one of the variables in the formula. Find the value of the variable that is not given.

77) P = 2L + 2w; L = 8, w = 4

A) L = 24 B) P = 12 C) P = 24 D) P = 64

77) _____

78) P = 4s; s = 27
A) P = 108 B) P = 31 C) s = 23 D) s = 108
78) _____

79) A = $\frac{1}{2}$bh; b = 17, h = 20 79) _____

A) A = 37.5 B) A = 170 C) A = 340 D) A = 37

80) d = rt; t = 2, d = 8
A) r = 6 B) r = 10 C) r = 4 D) d = 4
80) _____

81) P = 2L + 2w; P = 18, L = 3
A) w = 15 B) w = 6 C) L = 6 D) w = 21
81) _____

82) V = $\frac{1}{3}$Bh; V = 14, h = 2 82) _____

A) B = 16 B) B = 21 C) B = 7 D) B = 28

83) C = 2πr; C = 12.56, π = 3.14
A) r = 4 B) r = 15.70 C) r = 2 D) r = 78.88
83) _____

84) A = πr^2; r = 6, π = 3.14
A) A = 18.84 B) A = 9.14 C) A = 113.04 D) A = 59.16
84) _____

85) I = prt; I = 142.1, p = 290, r = 0.07
A) t = 2884.63 B) t = 7 C) t = 0.7 D) t = 28.8463
85) _____

86) A = $\frac{1}{2}$(b + B)h; A = 70, b = 19, B = 16 86) _____

A) h = 4 B) h = 17.5 C) h = 35 D) h = 304

Solve the formula for the specified variable.
87) A = $\frac{1}{2}$bh for h 87) _____

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

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

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

88) _____

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

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

90) $I = \frac{nE}{nr + R}$ for n 90) _____

A) $n = \frac{IR}{Ir + E}$ B) $n = \frac{-R}{Ir - E}$ C) $n = \frac{-IR}{Ir - E}$ D) $n = IR(Ir - E)$

91) $P = s_1 + s_2 + s_3$ for s_1 91) _____

A) $s_1 = s_2 + s_3 - P$ B) $s_1 = P + s_2 + s_3$ C) $s_1 = P - s_2 - s_3$ D) $s_1 = s_2 + P - s_3$

92) $F = \frac{9}{5}C + 32$ for C92) _____

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

93) $A = \frac{1}{2}h(b_1 + b_2)$ for b_1 93) _____

A) $b_1 = \frac{b_2 2A - h}{h}$ B) $b_1 = \frac{A - hb_2}{2h}$ C) $b_1 = \frac{hb_2 - 2A}{h}$ D) $b_1 = \frac{2A - hb_2}{h}$

94) $a + b = s + r$ for s

A) $s = r(a + b)$ B) $s = \frac{a + b}{r}$ C) $s = a + b - r$ D) $s = \frac{a}{r} + b$ 94) _____

95) $A = P(1 + nr)$ for r

A) $r = \frac{P - A}{Pn}$ B) $r = \frac{A}{n}$ C) $r = \frac{Pn}{A - P}$ D) $r = \frac{A - P}{Pn}$ 95) _____

Solve the problem.

96) A school purchased 9 printers at a total cost of $2961. Find the cost per printer.

A) $279 B) $329 C) $229 D) $2961

96) _____

97) Ted runs a shoe store. The equation g = n + r expresses the relationship between gross sales (g), net sales (n), and returns (r). What were Ted's net sales if his gross sales were $5600 and his returns were $1600? 97) _____

A) $4200 B) $1600 C) $5600 D) $4000

98) A golfer's net score (n) is determined by the equation n = g - h, where (g) is the gross score and (h) is the handicap. One player's net score was 71 and his handicap was 14. What was his gross score? 98) _____

A) 85 B) 77 C) 87 D) 74

99) Stevie bought a stereo for $275 and put it on sale at his store at a 50% (or 0.50) markup rate. What was the retail price of the stereo? 99) _____

A) $312.50 B) $375.00 C) $550.00 D) $412.50

100) Find the interest if $2400 is borrowed at 9% (or 0.09) for 3 years. (I = PRT)
A) $3048 B) $2160 C) $648 D) $216
100) _____

101) A woman invested $2000 at 7% (or 0.07) for 8 years. How much did she have in her account at the end of 8 years? (M = P(1 + RT)) 101) _____

A) $2240 B) $1120 C) $112 D) $3120

102) The amount of money in an account is given by $A = P(1 + r)^t$, where P is the principal invested, r is the interest rate (as a decimal), and t is the time of the investment. Find the amount at the end of 3 years if $300 is invested at 7%. 102) _____

A) $367.51 B) $510.00 C) $1473.90 D) $321.00

Write the statement as a ratio in lowest terms.

103) 93 yards to 42 yards
A) $\frac{21}{46}$ B) $\frac{46}{21}$ C) $\frac{31}{14}$ D) $\frac{14}{31}$ 103) _____

104) 20 hours to 4 days
A) $\frac{5}{24}$ B) 5 C) 120 D) $\frac{10}{3}$ 104) _____

105) $0.60 to $8.00
A) $\frac{3}{4}$ B) $\frac{4}{3}$ C) $\frac{3}{40}$ D) $\frac{40}{3}$ 105) _____

106) 3 weeks to 8 days
A) 3 B) $\frac{3}{56}$ C) $\frac{3}{8}$ D) $\frac{21}{8}$ 106) _____

Determine if the proportion is true or false.

107) $\frac{7}{8} = \frac{35}{40}$ 107) ____

A) True B) False

108) $\frac{28}{31} = \frac{87}{93}$ 108) ____

A) False B) True

109) $\frac{2.4}{2.7} = \frac{9.6}{10.8}$ 109) ____

A) True B) False

110) $\frac{16}{1.9} = \frac{102}{11.4}$ 110) ____

A) False B) True

111) $\frac{\frac{1}{25}}{\frac{1}{5}} = \frac{\frac{2}{20}}{\frac{2}{4}}$ 111) ____

A) False B) True

112) $\frac{8.54}{8.74} = \frac{50.2758}{460598}$ 112) ____

A) True B) False

Solve the proportion.

113) $\frac{x}{26} = \frac{7}{13}$ 113) ____

A) 48.3 B) 3.5 C) 14 D) 28

114) $\frac{5}{x} = \frac{15}{9}$ 114) ____

A) 3 B) 0.1 C) 8.3 D) 30

115) $\frac{1}{2} = \frac{x}{15}$ 115) ____

A) 15 B) 0.03 C) 7.5 D) 30

116) $\frac{95.550}{61.750} = \frac{P}{19}$ 116) ____

A) 9.5 B) 0.1 C) 29.4 D) 12.3

117) $\frac{18}{y} = \frac{32.04}{14.24}$ 117) ____

A) 8 B) 10.11 C) 0.02 D) 40.5

Solve the problem.

118) Dr. Wong can see 10 patients in 2 hours. At this rate, how long would it take her to see 70 patients? 118) ____

A) 350 hr B) 20 hr C) 13 hr D) 14 hr

119) Dr. Taylor can see 6 patients in 3 hours. At this rate, how long would it take him to see 18 patients? 119) ____

A) 9 hr B) 18 hr C) 8 hr D) 36 hr

120) Maria and Charlie can deliver 80 papers in 4 hours. How long would it take them to deliver 40 papers? 120) ____

A) 160 hr B) 8 hr C) 2.0 hr D) 2.5 hr

121) Doug and Inga can deliver 100 papers in 2 hours. How long would it take them to deliver 145 papers? 121) ____

A) 290 hr B) 4.4 hr C) 2.9 hr D) 1.4 hr

122) Mara can type 51 words per minute. How many words would she type in $\frac{1}{4}$ hour (15 minutes)? 122) ____

A) 204 words B) 191 words C) 13 words D) 765 words

123) Sven can type 59 words per minute. How many words would he type in $\frac{1}{4}$ hour (15 minutes)? 123) ____

A) 885 words B) 221 words C) 15 words D) 236 words

124) A machine can fill 4390 boxes of cereal in 0.5 hour. How many boxes of cereal can it fill per hour?
A) 8780 boxes B) 2195 boxes C) 4391 boxes D) 7317 boxes
124) ____

125) A machine can fill 1161 cartons of milk in 0.2 hour. How many cartons of milk can it fill per hour?
A) 5805 cartons B) 232 cartons C) 3870 cartons D) 1161 cartons
125) ____

126) On a map of the Thunderbird Country Club golf course, 0.5 inches equals 45 yards. How long is the 12th hole if the map shows 3 inches? 126) ____

A) 270 yd B) 7.5 yd C) 135 yd D) 67.5 yd

127) On a map of the Fox River, 1 centimeter equals 2 kilometers. If a trail by the river is actually 9.6 kilometers long, what is the length of the river on the map? 127) ____

A) 7.6 cm B) 4.8 cm C) 6.8 cm D) -2.4 cm

128) Joan can mow a 10-acre field in 5 hours. How long would it take her to mow a 3.8-acre field?
A) 3.9 hr B) 0.4 hr C) 1.9 hr D) 4.9 hr
128) _____

129) The 7th hole at the Riverwoods Golf Course is 381 yards long. How long would it be on a model with a scale of 1.5 inches to 75 yards? 129) _____

A) 8.49 in. B) 112.5 in. C) 7.62 in. D) 8.92 in.

130) If a computer prints 3.5 lines in 3 seconds, how many lines can it print per minute?
A) 71 lines B) 70 lines C) 70.5 lines D) 71.5 lines
130) _____

131) A label printer prints 7 pages of labels in 1.8 seconds. How long will it take to print 315 pages of labels? 131) _____

A) 84 sec B) 83 sec C) 81 sec D) 85 sec

132) On a map, the length of a nature-center trail is 6.8 centimeters. If the scale is 3 centimeters to 12 kilometers, what is the actual length of the trail? 132) _____

A) 31.2 km B) 28.2 km C) 54.4 km D) 27.2 km

133) If 8 sandwich rolls cost $2.16, how much will 22 rolls cost?
A) $19.28 B) $17.28 C) $5.94 D) $6.94
133) _____

134) Jim drove 329 miles in 7 hours. If he can keep the same pace, how long will it take him to drive 1128 miles? 134) _____

A) 2303 hr B) 24 hr C) 48 hr D) 34 hr

135) If a spring stretches 0.4 meter when a 6-kilogram weight is attached to it, how much will it stretch when a 21-kilogram weight is attached to it? 135) _____

A) 1.4 m B) 4.4 m C) 0.4 m D) 3.4 m

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Provide an appropriate response.

136) In the Multiplication Rule for solving equations, explain why each side of the equation must be multiplied or divided by the same nonzero number. 136) _____

137) Write a step-by-step explanation of how you would solve the equation $A = \frac{1}{2}(b + B)h$ for b. 137) _____

138) Explain how you would write a ratio in terms of whole numbers when one or both terms are fractions. 138) _____

139) Tell how you would split an amount according to a given ratio. 139) _____

140) What is the cross product method? Use an example. 140) _____

141) Is this an application of the cross product method? If not, why not?

$\frac{5}{6} \cdot \frac{3}{4} = \frac{18}{20} = \frac{9}{10}$ 141) _____

142) In your own words, explain how you would solve a word problem using proportions. 142) _____

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

Write using exponents.

143) $6 \cdot 6$

A) $6 + 6$ B) 6^2 C) 6^8 D) 6^3 143) ____

144) $10 \cdot 10 \cdot 10$

A) 10^4 B) 30 C) 10^3 D) 3^{10} 144) ____

145) $8 \cdot 8 \cdot 8 \cdot 8$

A) 8^5 B) 4^8 C) 8^4 D) 32

145) ____

146) $6 \times 6 \times 6 \times 6 \times 6$

A) 6^5 B) 6^6 C) 30 D) 5^6 146) ____

147) $x \cdot x \cdot x \cdot x$

A) 4^x B) x^2 C) $4x$ D) x^4 147) ____

Evaluate.

148) 10^2

A) 100 B) 20 C) 121 D) 1024

148) ____

149) $(0.09)^2$

A) 0.81 B) 0.0081 C) 0.045 D) 0.18

149) ____

150) X^0, when X = 2
A) 20 B) 0 C) 2 D) 1
150) _____

151) 11^1
A) 0 B) 11 C) 1 D) 111
151) _____

152) 10^0
A) 100 B) 10 C) 0 D) 1
152) _____

153) 8^3
A) 24 B) 6561 C) 343 D) 512
153) _____

Simplify, leaving exponents in the answer.
154) $(a \cdot b)^8$
A) a^8b^8 B) 8ab C) ab^8 D) a^8b 154) _____

155) $(x^9)^8$
A) $8x^{72}$ B) $8x^9$ C) x^{72} D) x^{17} 155) _____

156) $4^9 \cdot 4^4$
A) 16^{13} B) 4^{13} C) 4^{36} D) 16^{36} 156) _____

157) $x^6 \cdot x^7$
A) x^{42} B) $(2x)^{42}$ C) $(2x)^{13}$ D) x^{13} 157) _____

158) $\frac{8^{16}}{8^4}$ 158) _____

A) $8^{16} - 8^4$ B) 8^4 C) 8^{12} D) $\frac{1}{8^{12}}$

159) $\frac{x^{13}}{x^4}$ 159) _____

A) $\frac{1}{x^9}$ B) x^9 C) x^{17} D) $x^{13} - x^4$

160) $\left(\frac{3}{7}\right)^2$ 160) ____

A) $\frac{3}{7^2}$ B) $\frac{3^2}{7^2}$ C) $\frac{3^2}{7}$ D) $\frac{6}{14}$

161) $\left(\frac{P}{Q}\right)^3$ 161) ____

A) $\frac{P^3}{Q}$ B) $\frac{P}{Q^3}$ C) $\frac{P^3}{Q^3}$ D) $\frac{3P}{3Q}$

162) $\frac{9^u}{9^v}$ 162) ____

A) $9^u - 9^v$ B) $9^{(u-v)}$ C) $9^{(u+v)}$ D) $9^{(v-u)}$

Evaluate the expression.

163) $2 \cdot 9 - 7$

A) 4 B) 25 C) 11 D) 126

163) ____

164) $2 \cdot (5-1)^2$

A) 18 B) 32 C) 64 D) 50

164) ____

165) $7^2 - 2 \cdot 3$

A) 105 B) 43 C) 75 D) 141

165) ____

166) $(9 \cdot 7 - 21 \div 7)^0$

A) 66 B) 0 C) 60 D) 1

166) ____

167) $\{10^2 - 2^1 \cdot 6\}^1$

A) 1 B) 588 C) 88 D) 384

167) ____

168) $\frac{8^3}{8^2} \cdot 2 + 3$ 168) ____

A) 19 B) 8 C) 48 D) 13

169) $\frac{8^4}{8^4} \cdot 6^2$ 169) _____

A) 8 B) 36 C) 216 D) 12

Substitute the value(s) for the variable(s) and then evaluate.

170) $(x + 3)^2 - 2 \cdot 5$; $x = 4$

A) 39 B) 15 C) 235 D) 115

170) _____

171) $9p \div 4^2$; $p = 32$

A) 18 B) 36 C) 272 D) 9

171) _____

172) $\left(\frac{x}{3}\right)^2 \cdot 7 - 2y$; $x = 9, y = 6$ 172) _____

A) 240 B) 10 C) 51 D) 27

173) $\left(\frac{16}{m}\right)^2 \cdot c^2$; $m = 2, c = 4$ 173) _____

A) 64 B) 1024 C) 80 D) 2048

174) $4q \cdot (r^2 - 10.3)$; $q = 2, r = 5$

A) 324.8 B) 235.2 C) 117.6 D) 126

174) _____

175) $(19 - w)^u \cdot 4.6$; $w = 13, u = 2$

A) 78.8 B) 55.2 C) 358.8 D) 165.6

175) _____

176) $\frac{Sn^2}{3} \cdot 8 - 5^2$; $S = 32, n = 6$ 176) _____

A) 98,279 B) 3067 C) 23 D) 3047

Solve the problem.

177) The future value of an investment is given by $M = P(1 + i)^t$, where M = maturity value, P = amount initially invested, i = interest rate written as a decimal, and t = number of time periods. Find the future value of a $2400 investment expected to earn 6% per year for 5 years. Round to the nearest cent. 177) _____

A) $3237.24 B) $3225.40 C) $3232.45 D) $3211.74

178) The daily cost of producing a new battery for a laptop is given by $C = 0.2IN^2 + 13N + \$24{,}100$, where C = daily cost and N = average number produced per day. Find the daily cost if N = 360. 178) _____

A) $55,996 B) $57,659 C) $28,348 D) $54,375

179) The daily profit from selling a new action figure is given by $P = 0.032N^2 + 5.3N - \$67,400$, where P = daily profit and N = average number of figures sold per day. Find the daily profit if N = 1660. 179) _____

A) $29,577.20 B) $30,695.80 C) $28,465.00 D) $23,568.00

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

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

102) A
103) C
104) A
105) C
106) D
107) A
108) A
109) A
110) A
111) B
112) B
113) C
114) A
115) C
116) C
117) A
118) D
119) A
120) C
121) C
122) D
123) A
124) A
125) A
126) A
127) B
128) C
129) C
130) B
131) C
132) D
133) C
134) B
135) A
136) Multiplying both sides by zero would yield the equation $0 = 0$, which would not be equivalent to the original equation. Division by zero is undefined.
137) Answers will vary.
138) Divide the first term by the second term.
139) First, add the terms of the ratio. Then, divide the amount to be split by this sum. This gives one part. Multiply one part by each term in the ratio.
140) A true proportion has equal cross products.

$$\frac{a}{b} = \frac{c}{d}$$

$$ad = bc$$

141) No, cross multiplication is never used when multiplying fractions. It is only used with proportions. The answer is $\frac{5}{8}$.

142) Let x stand for the unknown amount. Use the information in the problem to make two ratios. The first ratio is given in the statement of the problem. Write it in fraction form with appropriate units. Write the second ratio so both numerators have the same unit name and both denominators do too. Make a proportion by setting the ratio equal. Solve for x.

143) B
144) C
145) C
146) A
147) D
148) A
149) B
150) D
151) B
152) D
153) D
154) A
155) C
156) B
157) D
158) C
159) B
160) B
161) C
162) B
163) C
164) B
165) B
166) D
167) C
168) A
169) B
170) A
171) A
172) C
173) B
174) C
175) D
176) D
177) D
178) A
179) A