

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

Solve the equation.

- | | | | | |
|----------------------------------|-----------|-----------|-----------|-----------|
| 1) $a + 2 = 7$
A) 9 | B) -9 | C) 5 | D) -5 | 1) _____ |
| 2) $8 = b + 3$
A) -5 | B) 5 | C) -11 | D) 11 | 2) _____ |
| 3) $a - 8 = 6$
A) -14 | B) 14 | C) 2 | D) -2 | 3) _____ |
| 4) $d + 12 = -28$
A) -16 | B) -40 | C) 16 | D) 40 | 4) _____ |
| 5) $-25 = 24 + f$
A) -1 | B) 49 | C) 1 | D) -49 | 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) 15 | C) -3 | 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) 26.22 | D) -27.22 | 9) _____ |
| 10) $t - 1 = 11$
A) 10 | B) -12 | C) -10 | D) 12 | 10) _____ |
| 11) $5x = 15$
A) 10 | B) 3 | C) 2 | D) 9 | 11) _____ |
| 12) $7m = 49$
A) 41 | B) 6 | C) 7 | D) 42 | 12) _____ |
| 13) $18 = 2k$
A) 15 | B) 8 | C) 9 | D) 16 | 13) _____ |
| 14) $13.8 = 2.3c$
A) 6 | B) 10.5 | C) 11.5 | D) 5 | 14) _____ |
| 15) $3.92x = 17.248$
A) 4.4 | B) 3.4 | C) 13.328 | D) 12.128 | 15) _____ |

- 16) $\frac{n}{2} = 5$ 16) _____
A) 10 B) 2 C) 6 D) 7
- 17) $\frac{x}{8} = 3$ 17) _____
A) 10 B) 5 C) 24 D) 11
- 18) $\frac{3}{7}z = 24$ 18) _____
A) 21 B) 56 C) 9 D) 24
- 19) $\frac{4}{5} = 36y$ 19) _____
A) $\frac{1}{36}$ B) $\frac{1}{45}$ C) $\frac{1}{4}$ D) $\frac{1}{5}$
- 20) $4.7 = \frac{b}{7}$ 20) _____
A) 32.9 B) 31.9 C) 10.7 D) 11.7
- 21) $2r + 3 = 23$ 21) _____
A) 10 B) 18 C) 8 D) 22
- 22) $4n - 2 = 38$ 22) _____
A) 11 B) 40 C) 10 D) 36
- 23) $7 = 3x - 8$ 23) _____
A) 12 B) 5 C) 16 D) 10
- 24) $35 = 7x + 7$ 24) _____
A) 21 B) 4 C) 2 D) 25
- 25) $161 = 13x + 18$ 25) _____
A) 11 B) 5 C) 130 D) 134
- 26) $\frac{x}{3} + 3 = 10$ 26) _____
A) 39 B) 21 C) 10 D) 41
- 27) $10 + 7p = 3$ 27) _____
A) $1\frac{6}{7}$ B) $1\frac{5}{7}$ C) 1 D) - 1
- 28) $6 = \frac{w}{9} - 8$ 28) _____
A) 129 B) 5 C) 4 D) 126

- 29) $\frac{1}{2}x + \frac{3}{5} = \frac{9}{10}$ 29) _____
 A) $\frac{3}{5}$ B) $1\frac{1}{2}$ C) 3 D) $\frac{3}{10}$
- 30) $6.6x + 2 = 48.2$ 30) _____
 A) 4.6 B) 7 C) 14 D) 8
- 31) $4z + 19 = 3z + 6$ 31) _____
 A) -13 B) 25 C) 13 D) -25
- 32) $7x - 6x = 19$ 32) _____
 A) 19 B) 0 C) $-\frac{1}{19}$ D) -19
- 33) $10y = 7y + 7 + 2y$ 33) _____
 A) -7 B) 7 C) -70 D) 70
- 34) $-5a + 5 + 6a = 11 - 26$ 34) _____
 A) -20 B) 42 C) -42 D) 20
- 35) $11x - 4x + x = 40$ 35) _____
 A) 10 B) $\frac{1}{5}$ C) 25 D) 5
- 36) $-8b + 6 + 6b = -3b + 11$ 36) _____
 A) -11 B) 5 C) 11 D) -6
- 37) $7.8m + 3m - m = 29.4$ 37) _____
 A) 7.8 B) 9.8 C) 30 D) 3.0
- 38) $\frac{3}{4}x - \frac{1}{8}x = 0.875$ 38) _____
 A) $1\frac{1}{4}$ B) $1\frac{1}{3}$ C) $1\frac{2}{5}$ D) $\frac{5}{7}$
- 39) $p + 5.7 = 6.21$ 39) _____
 A) 11.41 B) 0.71 C) 0.51 D) 11.91
- 40) $s - 0.0127 = 0.031$ 40) _____
 A) 0.0183 B) 0.0383 C) 0.0437 D) -0.0063
- 41) $y + 0.0398 = 0.0654$ 41) _____
 A) 0.1052 B) 0.0256 C) 0.0552 D) 0.0456
- 42) $s - 1.3 = 2.1$ 42) _____
 A) 0.8 B) 3.1 C) 3.4 D) 1

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

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

Write the phrase as a mathematical expression. Use x as the variable.

45) 9 less than a number 45) _____
A) $x - (-9)$ B) $9 - x$ C) $x - 9$ D) 9

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

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

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

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

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

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

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

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

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

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

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

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

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

59) 409 divided by some number 59) _____
A) $409 - x$ B) $409 + x$ C) $409x$ D) $\frac{409}{x}$

60) The product of 8.8 and the sum of a number and 5 60) _____
A) $8.8(x + 5)$ B) $5(x + 8.8)$ C) $8.8(x - 5)$ D) $5(x - 8.8)$

61) One-third of a number added to the difference of the number and 6 61) _____
A) $\frac{x - 6}{3}$ B) $\frac{x - 6}{3x}$ C) $\frac{1}{3}x + (6 - x)$ D) $\frac{1}{3}x + (x - 6)$

62) The quotient of 8 less than a number and 5 more than the number 62) _____
A) $\frac{x + 8}{x - 5}$ B) $(x - 8) + (x + 5)$ C) $\frac{8}{5}x$ D) $\frac{x - 8}{x + 5}$

Translate the statement into a mathematical expression.

63) An employee's salary, s , is increased by \$480. 63) _____
A) $s - 480$ B) $s + 480$ C) 480 D) $480s$

64) A salesperson drove 6 hours. How long will he have driven t hours later? 64) _____
A) $6t$ B) $6 + t$ C) 6 D) $6 - t$

65) There were 50 men and women at a meeting. If m of them were men, how many were women? 65) _____
A) $50m$ B) $50 + m$ C) $50 - m$ D) $\frac{m}{50}$

66) Find the value of x \$20-bills. 66) _____
A) $20x$ B) $x - 20$ C) $\frac{20}{x}$ D) $20 + x$

67) Find the cost of 4 beds at b dollars each. 67) _____
A) $\frac{4}{b}$ B) $4 - b$ C) $4b$ D) $4 + b$

68) A community theater collected \$1945 by selling t tickets. Find the cost of each ticket. 68) _____
A) $\frac{1945}{t}$ B) $1945t$ C) $1945 + t$ D) $\frac{t}{1945}$

Solve the problem.

- 69) Four times a number added to 9 times the number equals 65. Find the number. 69) _____
A) 5 B) 7 C) 7.2 D) 0.6
- 70) When 5 times a number is subtracted from 7 times the number, the result is 14. Find the number. 70) _____
A) 7 B) 14 C) 2 D) 9
- 71) If 5 times a number is added to -4, the result is 9 times the number. Find the number. 71) _____
A) -1 B) 1 C) -10 D) 10
- 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) \$3.70 B) \$21.15 C) \$25.85 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) 110 B) 126 C) 252 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) \$7275 B) \$16,975 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) 17 B) 15 C) 23 D) 38
- 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) 86 C) 46 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) $P = 2L + 2w$; $L = 8$, $w = 4$ 77) _____
A) $P = 64$ B) $P = 12$ C) $L = 24$ D) $P = 24$
- 78) $P = 4s$; $s = 27$ 78) _____
A) $s = 108$ B) $s = 23$ C) $P = 31$ D) $P = 108$
- 79) $A = \frac{1}{2}bh$; $b = 17$, $h = 20$ 79) _____
A) $A = 170$ B) $A = 37.5$ C) $A = 37$ D) $A = 340$
- 80) $d = rt$; $t = 2$, $d = 8$ 80) _____
A) $d = 4$ B) $r = 4$ C) $r = 10$ D) $r = 6$
- 81) $P = 2L + 2w$; $P = 18$, $L = 3$ 81) _____
A) $L = 6$ B) $w = 21$ C) $w = 6$ D) $w = 15$

- 82) $V = \frac{1}{3}Bh$; $V = 14$, $h = 2$ 82) _____
 A) $B = 21$ B) $B = 28$ C) $B = 7$ D) $B = 16$
- 83) $C = 2\pi r$; $C = 12.56$, $\pi = 3.14$ 83) _____
 A) $r = 78.88$ B) $r = 15.70$ C) $r = 2$ D) $r = 4$
- 84) $A = \pi r^2$; $r = 6$, $\pi = 3.14$ 84) _____
 A) $A = 113.04$ B) $A = 59.16$ C) $A = 9.14$ D) $A = 18.84$
- 85) $I = prt$; $I = 142.1$, $p = 290$, $r = 0.07$ 85) _____
 A) $t = 28.8463$ B) $t = 2884.63$ C) $t = 0.7$ D) $t = 7$
- 86) $A = \frac{1}{2}(b + B)h$; $A = 70$, $b = 19$, $B = 16$ 86) _____
 A) $h = 35$ B) $h = 304$ C) $h = 17.5$ D) $h = 4$

Solve the formula for the specified variable.

- 87) $A = \frac{1}{2}bh$ for h 87) _____
 A) $h = \frac{2A}{b}$ B) $h = \frac{Ab}{2}$ C) $h = \frac{A}{2b}$ D) $h = \frac{b}{2A}$
- 88) $S = 2\pi rh + 2\pi r^2$ for h 88) _____
 A) $h = 2\pi(S - r)$ B) $h = S - r$ C) $h = \frac{S}{2\pi r - 1}$ D) $h = \frac{S - 2\pi r^2}{2\pi r}$
- 89) $V = \frac{1}{3}Bh$ for h 89) _____
 A) $h = \frac{V}{3B}$ B) $h = \frac{B}{3V}$ C) $h = \frac{3V}{B}$ 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) $s_1 = P - s_2 - s_3$ B) $s_1 = P + s_2 + s_3$ C) $s_1 = s_2 + P - s_3$ D) $s_1 = s_2 + s_3 - P$
- 92) $F = \frac{9}{5}C + 32$ for C 92) _____
 A) $C = \frac{5}{9}(F - 32)$ B) $C = \frac{9}{5}(F - 32)$ C) $C = \frac{5}{F - 32}$ D) $C = \frac{F - 32}{9}$

- 93) $A = \frac{1}{2}h(b_1 + b_2)$ for b_1 93) _____
- A) $b_1 = \frac{2A - hb_2}{h}$ B) $b_1 = \frac{b_2 2A - h}{h}$ C) $b_1 = \frac{A - hb_2}{2h}$ D) $b_1 = \frac{hb_2 - 2A}{h}$
- 94) $a + b = s + r$ for s 94) _____
- A) $s = \frac{a + b}{r}$ B) $s = a + b - r$ C) $s = r(a + b)$ D) $s = \frac{a}{r} + b$
- 95) $A = P(1 + nr)$ for r 95) _____
- A) $r = \frac{A - P}{Pn}$ B) $r = \frac{Pn}{A - P}$ C) $r = \frac{P - A}{Pn}$ D) $r = \frac{A}{n}$

Solve the problem.

- 96) A school purchased 9 printers at a total cost of \$2961. Find the cost per printer. 96) _____
- A) \$329 B) \$229 C) \$2961 D) \$279
- 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) \$1600 B) \$4200 C) \$4000 D) \$5600
- 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) 87 B) 77 C) 85 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) \$412.50 C) \$375.00 D) \$550.00
- 100) Find the interest if \$2400 is borrowed at 9% (or 0.09) for 3 years. ($I = PRT$) 100) _____
- A) \$648 B) \$2160 C) \$216 D) \$3048
- 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) \$3120 B) \$112 C) \$1120 D) \$2240
- 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) \$321.00 D) \$1473.90

Write the statement as a ratio in lowest terms.

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

104) 20 hours to 4 days

A) 5

B) $\frac{5}{24}$

C) 120

D) $\frac{10}{3}$

104) _____

105) \$0.60 to \$8.00

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

B) $\frac{40}{3}$

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

D) $\frac{3}{40}$

105) _____

106) 3 weeks to 8 days

A) $\frac{3}{56}$

B) $\frac{21}{8}$

C) 3

D) $\frac{3}{8}$

106) _____

Determine if the proportion is true or false.

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

A) True

B) False

107) _____

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

A) False

B) True

108) _____

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

A) True

B) False

109) _____

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

A) False

B) True

110) _____

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

A) False

B) True

111) _____

112) $\frac{8.54}{8.74} = \frac{50.2758}{46.0598}$

A) False

B) True

112) _____

Solve the proportion.

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

A) 14

B) 28

C) 3.5

D) 48.3

113) _____

114) $\frac{5}{y} = \frac{15}{9}$

A) 0.1

B) 8.3

C) 30

D) 3

114) _____

- 115) $\frac{1}{2} = \frac{r}{15}$ 115) _____
 A) 7.5 B) 15 C) 30 D) 0.03
- 116) $\frac{95.550}{61.750} = \frac{p}{19}$ 116) _____
 A) 29.4 B) 0.1 C) 12.3 D) 9.5
- 117) $\frac{18}{y} = \frac{32.04}{14.24}$ 117) _____
 A) 8 B) 0.02 C) 10.11 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) 13 hr C) 14 hr D) 20 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) 36 hr B) 8 hr C) 18 hr D) 9 hr
- 120) Maria and Charlie can deliver 80 papers in 4 hours. How long would it take them to deliver 40 papers? 120) _____
 A) 2.5 hr B) 8 hr C) 2.0 hr D) 160 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) 1.4 hr C) 4.4 hr D) 2.9 hr
- 122) Mara can type 51 words per minute. How many words would she type in $\frac{1}{4}$ hour (15 minutes)? 122) _____
 A) 13 words B) 191 words C) 204 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) 15 words B) 885 words C) 221 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? 124) _____
 A) 8780 boxes B) 2195 boxes C) 7317 boxes D) 4391 boxes
- 125) A machine can fill 1161 cartons of milk in 0.2 hour. How many cartons of milk can it fill per hour? 125) _____
 A) 232 cartons B) 1161 cartons C) 3870 cartons D) 5805 cartons
- 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) 67.5 yd B) 135 yd C) 7.5 yd D) 270 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) -2.4 cm B) 7.6 cm C) 6.8 cm D) 4.8 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? 128) _____
 A) 0.4 hr B) 3.9 hr C) 1.9 hr D) 4.9 hr
- 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) 8.92 in. C) 7.62 in. D) 112.5 in.
- 130) If a computer prints 3.5 lines in 3 seconds, how many lines can it print per minute? 130) _____
 A) 70.5 lines B) 71.5 lines C) 71 lines D) 70 lines
- 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) 85 sec B) 81 sec C) 83 sec D) 84 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) 27.2 km B) 28.2 km C) 54.4 km D) 31.2 km
- 133) If 8 sandwich rolls cost \$2.16, how much will 22 rolls cost? 133) _____
 A) \$5.94 B) \$19.28 C) \$6.94 D) \$17.28
- 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) 34 hr B) 48 hr C) 2303 hr D) 24 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) 0.4 m B) 3.4 m C) 4.4 m D) 1.4 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? 141) _____
 $\frac{5}{6} \cdot \frac{3}{4} = \frac{18}{20} = \frac{9}{10}$

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) $6 \cdot 6$ 143) _____
A) $6 + 6$ B) 6^8 C) 6^2 D) 6^3

144) $10 \cdot 10 \cdot 10$ 144) _____
A) 3^{10} B) 10^4 C) 10^3 D) 30

145) $8 \cdot 8 \cdot 8 \cdot 8$ 145) _____
A) 8^5 B) 32 C) 8^4 D) 4^8

146) $6 \times 6 \times 6 \times 6 \times 6$ 146) _____
A) 5^6 B) 30 C) 6^5 D) 6^6

147) $x \cdot x \cdot x \cdot x$ 147) _____
A) $4x$ B) x^4 C) 4^x D) x^2

Evaluate.

148) 10^2 148) _____
A) 20 B) 1024 C) 100 D) 121

149) $(0.09)^2$ 149) _____
A) 0.81 B) 0.18 C) 0.045 D) 0.0081

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

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

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

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

Simplify, leaving exponents in the answer.

154) $(a \cdot b)^8$ 154) _____
A) a^8b B) a^8b^8 C) ab^8 D) $8ab$

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

- 156) $4^9 \cdot 4^4$ 156) _____
 A) 16^{13} B) 4^{36} C) 16^{36} D) 4^{13}
- 157) $x^6 \cdot x^7$ 157) _____
 A) $(2x)^{13}$ B) x^{42} C) x^{13} D) $(2x)^{42}$
- 158) $\frac{8^{16}}{8^4}$ 158) _____
 A) 8^4 B) $8^{16} - 8^4$ C) $\frac{1}{8^{12}}$ D) 8^{12}
- 159) $\frac{x^{13}}{x^4}$ 159) _____
 A) $\frac{1}{x^9}$ B) x^{17} C) $x^{13} - x^4$ D) x^9
- 160) $\left(\frac{3}{7}\right)^2$ 160) _____
 A) $\frac{6}{14}$ B) $\frac{3}{72}$ C) $\frac{3^2}{7^2}$ D) $\frac{3^2}{7}$
- 161) $\left(\frac{P}{Q}\right)^3$ 161) _____
 A) $\frac{P}{Q^3}$ B) $\frac{P^3}{Q^3}$ C) $\frac{P^3}{Q}$ D) $\frac{3P}{3Q}$
- 162) $\frac{9u}{9v}$ 162) _____
 A) $9(u-v)$ B) $9(u+v)$ C) $9(v-u)$ D) $9u - 9v$

Evaluate the expression.

- 163) $2 \cdot 9 - 7$ 163) _____
 A) 126 B) 25 C) 11 D) 4
- 164) $2 \cdot (5 - 1)^2$ 164) _____
 A) 64 B) 18 C) 32 D) 50
- 165) $7^2 - 2 \cdot 3$ 165) _____
 A) 141 B) 105 C) 75 D) 43
- 166) $(9 \cdot 7 - 21 \div 7)^0$ 166) _____
 A) 60 B) 1 C) 66 D) 0

167) $(10^2 - 21 \cdot 6)^1$ 167) _____
 A) 1 B) 384 C) 88 D) 588

168) $\frac{8^3}{8^2} \cdot 2 + 3$ 168) _____
 A) 19 B) 48 C) 8 D) 13

169) $\frac{8^4}{8^4} \cdot 6^2$ 169) _____
 A) 216 B) 8 C) 12 D) 36

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

170) $(x + 3)^2 - 2 \cdot 5$; $x = 4$ 170) _____
 A) 115 B) 235 C) 39 D) 15

171) $9p \div 42$; $p = 32$ 171) _____
 A) 272 B) 18 C) 9 D) 36

172) $\left(\frac{x}{3}\right)^2 \cdot 7 - 2y$; $x = 9, y = 6$ 172) _____
 A) 51 B) 240 C) 27 D) 10

173) $\left(\frac{16}{m}\right)^2 \cdot c^2$; $m = 2, c = 4$ 173) _____
 A) 64 B) 2048 C) 80 D) 1024

174) $4q \cdot (r^2 - 10.3)$; $q = 2, r = 5$ 174) _____
 A) 126 B) 235.2 C) 324.8 D) 117.6

175) $(19 - w)^u \cdot 4.6$; $w = 13, u = 2$ 175) _____
 A) 78.8 B) 358.8 C) 55.2 D) 165.6

176) $\frac{Sn^2}{3} \cdot 8 - 5^2$; $S = 32, n = 6$ 176) _____
 A) 3067 B) 23 C) 3047 D) 98,279

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) \$3211.74 D) \$3232.45

178) The daily cost of producing a new battery for a laptop is given by $C = 0.21N^2 + 13N + \$24,100$, where C = daily cost and N = average number produced per day. Find the daily cost if $N = 360$. 178) _____
 A) \$57,659 B) \$55,996 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) \$23,568.00 B) \$29,577.20 C) \$30,695.80 D) \$28,465.00

Answer Key

Testname: UNTITLED2

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

Answer Key

Testname: UNTITLED2

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

Answer Key

Testname: UNTITLED2

- 101) A
102) A
103) C
104) B
105) D
106) B
107) A
108) A
109) A
110) A
111) B
112) A
113) A
114) D
115) A
116) A
117) A
118) C
119) D
120) C
121) D
122) D
123) B
124) A
125) D
126) D
127) D
128) C
129) C
130) D
131) B
132) A
133) A
134) D
135) D
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 $\frac{5}{8}$.

Answer Key

Testname: UNTITLED2

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