Math 0098 Pre-college Algebra   Final Exam Review

This study guide provides a good review of most of the topics in the course, but do not use it as your only review source. Seek help on any problems you cannot solve.

The Final Exam will be approximately 35 multiple choice problems. You should bring your graphing calculator to the exam.

1. Evaluate. $6^3 \div 9 - 6$

   a. 8
   b. 213
   c. 18
   d. 72

2. Evaluate. $\dfrac{3(8+5)+3\cdot3}{3(5-1)}$

   a. 4
   b. 3
   c. $\dfrac{6}{7}$
   d. $\dfrac{7}{2}$

3. Evaluate. $\dfrac{7(14-3^2)}{7\cdot4\cdot17}$

   a. $\dfrac{95}{28}$
   b. $\dfrac{5}{4}$
   c. $\dfrac{68}{5}$
   d. $\dfrac{5}{68}$

Use a calculator to find the value of the following roots. Round your answer to the nearest hundredth.

4. $\sqrt{38}$

   a. 6
   b. 6.16
   c. 38
   d. 1444

5. $\sqrt{6561}$

   a. 3
   b. 9
   c. 81
   d. 3280.5

6. Solve for x. Simplify your answer as much as possible.

$$3x - 5 = 2(x + 1) + x$$

   a. $x = 1$
   b. $x = \dfrac{7}{6}$
   c. $x = 7$
   d. No solution

7. Solve for x. Simplify your answer as much as possible.

$$4(2x - 3) = 5 - 7x$$

   a. $x = \dfrac{17}{15}$
   b. $x = \dfrac{15}{17}$
   c. $x = 17$
   d. $x = -7$

8. Solve for x. Simplify your answer as much as possible.

$$5x - 2(3 - x) = 7x - 6$$

   a. $x = 0$
   b. $x = 3$
   c. No solution
   d. All real numbers

9. Rewrite as a power of ten.

   100,000,000

   a. 10
   b. 10^6
   c. 10^7
   d. 10^8

10. Evaluate.

$$10^4$$

   a. 100
   b. 1,000
   c. 10,000
   d. 100,000

11. Rewrite as a power of ten.

$$\frac{1}{10,000}$$

   a. 10^{-6}
   b. 10^{-5}
   c. 10^{-4}
   d. 10

12. Evaluate.

$$10^{-3}$$

   a. $\frac{1}{10}$
   b. $\frac{1}{100}$
   c. $\frac{1}{1,000}$
   d. $\frac{1}{10,000}$

13. Evaluate the expression.

$$\frac{6}{0}$$

   a. undefined
   b. 6
   c. 0

14. Evaluate the expression.

$$8 \div 0$$

   a. 0
   b. 8
   c. undefined

15. Evaluate the expression.

$$\frac{0}{4}$$

   a. undefined
   b. 4
   c. 0

16. Evaluate the expression.

$$0 \div 5$$

   a. 0
   b. 5
   c. undefined

17. Solve the inequality for x. Simplify your answer as much as possible.

$$4x + 5 < 29$$

   a. $(-\infty, 6]$
   b. $(6, \infty)$
   c. $(-\infty, 6)$
   d. $[6, \infty)$

18. Solve the inequality for c. Simplify your answer as much as possible.

$$7c + 10 \leq 6c - 2$$

   a. $(-\infty, -12]$
   b. $[-12, \infty)$
   c. $(7, \infty)$
   d. $(-\infty, 7)$

19. Solve the inequality for x. Simplify your answer as much as possible.

$$2x - 18 > 3(3x - 13)$$

   a. $[3, \infty)$
   b. $(-\infty, 3]$
   c. $(3, \infty)$
   d. $(-\infty, 3)$

20. Simplify:

$$\sqrt{27}$$

    a. $3\sqrt{3}$
    b. $9\sqrt{3}$
    c. 3^3
    d. $3\sqrt{9}$

21. What is the value of:

$$\sqrt{64}$$

    a. $16\sqrt{4}$
    b. $4\sqrt{16}$
    c. 4^3
    d. 8

22. Simplify:

$$\sqrt{72}$$

    a. $36\sqrt{2}$
    b. $6\sqrt{2}$
    c. $2\sqrt{36}$
    d. $3\sqrt{8}$

23. Find the greatest common factor of these three expressions.

$$15\ x^2, 3x^5, \text{and } 36x^3$$

a. $3x^2$
b. $3x^3$
c. $3x^5$
d. $105x^5$

24. Find the greatest common factor of these three expressions.

$$35\ v, 5v^3, \text{and } 70v^4$$

a. $5v^4$
b. $5v^3$
c. $5v$
d. $70v^4$

25. If two is subtracted from four times a number, the result is three more than six times the number. An equation that models this problem, where x is the unknown, is:

a. $4x - 2 + 3 + 6x = 0$
b. $2 - 4x + 3 + 6x = 0$
c. $2 - 4x = 3 + 6x$
d. $4x - 2 = 6x + 3$

26. A piece of pipe is 50 inches long. It is cut into three pieces. The longest piece is 10 inches more than the middle sized piece, and the shortest piece measures 5 inches less that the middle sized piece. An equation that models this problem, where x is the unknown, is

a. $x + 10 + x + (5 - x) = 50$
b. $x + 10 + x + (x + 5) = 50$
c. $x + \frac{x}{3} + (5 - x) = 50$
d. $x + 10 + x + (x - 5) = 50$

27. A rope 116 inches long is cut into three pieces. The middle-sized piece is 10 inches shorter than twice the shortest piece. The longest piece is $\frac{5}{3}$ as long as the shortest piece. What is the length of the shortest piece?

a. 27
b. 44
c. 45
d. 54

28. A rectangular garden is 25 ft wide. If its area is 1200 ft², what is the length of the garden?

a. 25 feet
b. 48 feet
c. 40 feet
d. 36 feet

29. The length of a rectangle is three times its width. If the area of the rectangle is 108 ft^2, find its perimeter.
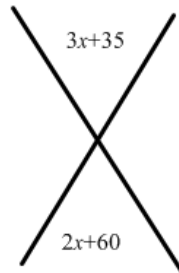
   a. 6 ft
   b. 24 ft
   c. 48 ft
   d. 36 ft

30. The length of a rectangle is 5 ft. longer than its width. If the perimeter of the rectangle is 50 ft., find its area.
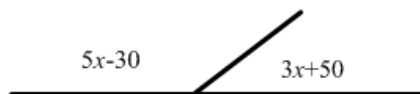
   a. 30 ft^2
   b. 150 ft^2
   c. 50 ft^2
   d. 15 ft^2

31. Given the figure below, find the value of x.
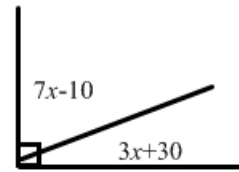
   a. 17
   b. 25
   c. 90
   d. -1

32. Given the figure below, find the value of x.

   a. 20
   b. 80
   c. 12.5
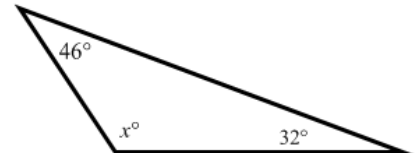   d. 50

33. Given the figure below, find the value of x.

   a. 4
   b. 7
   c. 12.5
   d. 5

34. Find the value of x in the figure.

   a. 12
   b. 14
   c. 78
   d. 102

35. Solve the following equation for y.

   $$4y = 3x + 7$$

   a. $y = -\frac{3}{4}x - \frac{7}{4}$
   b. $y = \frac{3}{4}x + \frac{7}{4}$
   c. $y = \frac{3}{4x} + \frac{7}{4}$
   d. $y = -\frac{3}{4}x - \frac{7}{4}$

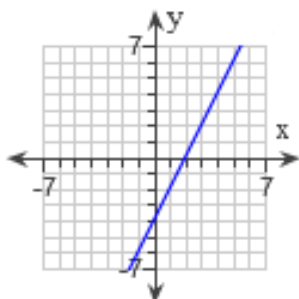36. Rewrite in slope-intercept form.

   $$4x - 3y = 0$$

   a. $y = \frac{3}{4}x$
   b. $y = -\frac{3}{4}x$
   c. $y = \frac{4}{3}x$
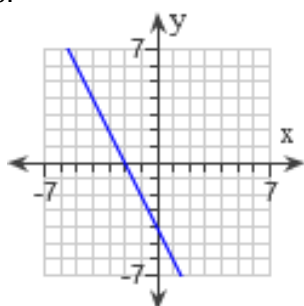   d. The equation cannot be written in slope-intercept form.
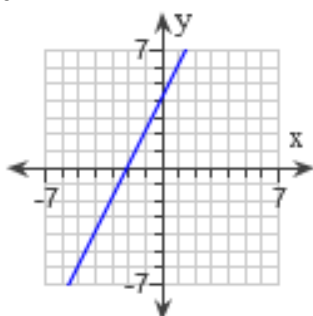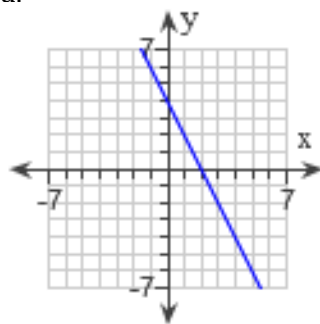
37. Graph the line.
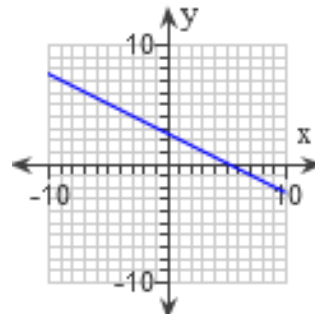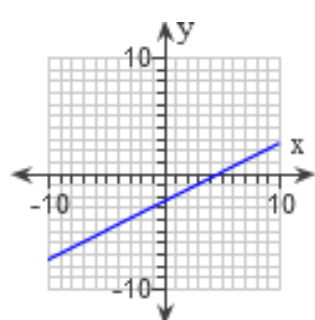$$y = 2x + 4$$

a.

b.

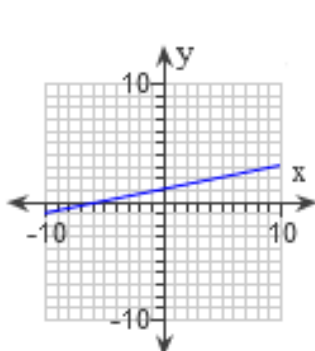
c.
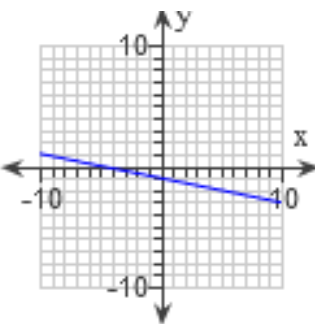

d.

38. Graph the line.
$$2x - 4y = 10$$

a.

b.

c.

d.

39. Solve the following equation for y.

$$2x + 7y = 7$$

a. $y = -\frac{2}{7}x + 1$

b. $y = \frac{2}{7}x + 1$

c. $y = -\frac{2}{7}x + 7$

d. $y = -\frac{2}{7}x - 7$

40. Find the x-intercept of the line.
$$y = -5x + 10$$

a. $(0,2)$

b. $(2,0)$

c. $(10,0)$

d. $(0,10)$

41. Find the y-intercept of the line.
$$3x - 6y = 3$$

a. $(0,1)$

b. $(1,0)$

c. $\left(-\frac{1}{2}, 0\right)$

d. $\left(0, -\frac{1}{2}\right)$

42. Find the x-intercept of the line.
$$6x - y = 6$$

a. $(-6,0)$

b. $(1,0)$

c. $(0, -6)$

d. $(0,1)$

43. Write the equation of the horizontal line passing through the point (2,4).

a. $y = 4$

b. $x = 4$

c. $y = 2$

d. $x = 2$

44. Which equation represents the graph below?
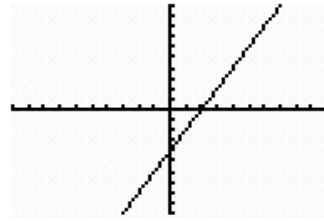
a. $y = 2x - 4$

b. $y = -4x + 2$

c. $y = -2x + 4$

d. $y = 4x - 2$

45. Which equation represents the graph below?
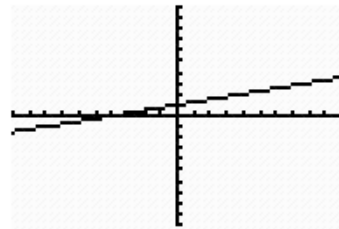
a. $-x + y = 4$

b. $x + y = -4$

c. $-x + 4y = 4$

d. $x + 4y = 16$

46. Write an equation in slope-intercept form for the line with slope -4 and y-intercept 5.

a. $y = -4x - 5$

b. $y = -4x + 5$

c. $y = 5x + 4$

d. $y = 5x - 4$

47. A line passes through the point (4, 1) and has a slope of -2. Write an equation in slope-intercept form for this line.

    a. $y = -2x + 7$
    b. $y = -2x + 9$
    c. $y = -2x$
    d. $y = 2x - 9$

48. A line has a slope of $-\dfrac{4}{7}$ and passes through the point (14, -6). Write an equation in slope-intercept form for this line.

    a. $y = -\dfrac{4}{7}x + 2$
    b. $y = -\dfrac{4}{7}x - 2$
    c. $y = -\dfrac{4}{7}x + 14$
    d. $y = -\dfrac{4}{7}x - 14$

49. The equation of a line with an undefined slope passing through the point (-3,-4) is:

    a. $y = -4$
    b. $x = -3$
    c. $y = 3$
    d. $x = 4$

50. Write an equation in slope-intercept form for the line that passing through the points (4,-3) and (-2, 9).

    a. $y = -x - 7$
    b. $y = -x + 1$
    c. $y = -2x + 5$
    d. $y = -3x + 3$

51. Find the slope for the line passing through the points (2,-5) and (-4, 3)

    a. $-\dfrac{3}{4}$
    b. $-\dfrac{4}{3}$
    c. $\dfrac{1}{3}$
    d. 3

52. Write an equation in slope-intercept form for the line that passing through the points (2,3) and (4,9)

    a. $y = 3x - 9$
    b. $y = 3x - 3$
    c. $y = \dfrac{1}{3}x + \dfrac{7}{3}$
    d. $y = \dfrac{1}{3}x - \dfrac{11}{3}$

53. The following two lines are:

$$4x + 2y = 8$$
$$6x + 3y = -3$$

    a. Parallel
    b. Perpendicular
    c. Neither parallel nor perpendicular

54. The following two lines are:

$$9x + 3y = 2$$
$$x - 3y = 5$$

    a. Parallel
    b. Perpendicular
    c. Neither parallel nor perpendicular

55. The following two lines are:

$$4x + 2y = 7$$
$$5x + 3y = 11$$

    a. Parallel
    b. Perpendicular
    c. Neither parallel nor perpendicular

56. Find the midpoint M of the line segment joining the points $A = (3,6)$ and $B = (7,1)$.

    a. $M = \left(5, \frac{7}{2}\right)$
    b. $M = (10, 7)$
    c. $M = (-4, 5)$
    d. $M = \left(-2, \frac{5}{2}\right)$

57. Find the midpoint M of the line segment joining the points $A = (9, -4)$ and $B = (-2, 9)$.

    a. $M = \left(\frac{11}{2}, -\frac{13}{2}\right)$
    b. $M = \left(\frac{7}{2}, \frac{5}{2}\right)$
    c. $M = (11, -13)$
    d. $M = (7, 5)$

58. Find the midpoint M of the line segment joining the points $A = (-6, -2)$ and $B = (0,5)$.

    a. $M = (-6, -7)$
    b. $M = (-6, 3)$
    c. $M = \left(-3, -\frac{7}{2}\right)$
    d. $M = \left(-3, \frac{3}{2}\right)$

59. Find the midpoint M of the line segment joining the points $A = (1, -8)$ and $B = (-6, 3)$.

    a. $M = \left(\frac{7}{2}, -\frac{11}{2}\right)$
    b. $M = \left(-\frac{5}{2}, -\frac{5}{2}\right)$
    c. $M = (-5, -5)$
    d. $M = (7, -11)$

60. The system $\begin{cases} 2x - 3y = 7 \\ -4x + 6y = 14 \end{cases}$ has

    a.   Two solutions
    b.   One solution
    c.   No solution
    d.   Infinitely many solutions

61. The system $\begin{cases} 2x - 12y = 15 \\ 4x - 24y = 30 \end{cases}$ has

    a. One solution
    b. No solution
    c. Infinitely many solutions
    d. A finite number of solutions

62. The system $\begin{cases} 5x - 3y = -15 \\ x + y = -3 \end{cases}$ has

    a. One solution
    b. No solution
    c. Infinitely many solutions
    d. A finite number of solutions

63. The system $\begin{cases} 3x + y = 6 \\ 6x + 2y = -4 \end{cases}$ has

    a. One solution
    b. No solution
    c. Infinitely many solutions
    d. A finite number of solutions

64. The y-coordinate of the solution for the system $\begin{cases} x + y = 3 \\ -3x + 2y = -19 \end{cases}$ is

    a.   5
    b.   2
    c.   -5
    d.   -2

65. The statement which is **not** correct is:

    a. $-|-4| = -4$
    b. $-(-1)^4 = -1$
    c. $(-7)^0 = 1$
    d. $-4^0 = 1$

66. For the system of equations given below, choose the best description of its solution.
$$\begin{cases} 9x + 12\,y = -81 \\ -3x + 4y = 27 \end{cases}$$

   a. The system has a unique solution $(x, y) = (-9, 0)$
   b. The system has a unique solution $(x, y) = \left(0, \frac{27}{4}\right)$
   c. The system has infinitely many solutions that must satisfy the following equation: $y = -\frac{3}{4}x - \frac{27}{4}$
   d. The system has no solution

67. For the system of equations given below, choose the best description of its solution. $\begin{cases} y = 4x - 9 \\ 3x - y = 6 \end{cases}$

   a. The system has a unique solution $(x, y) = (-3, 3)$
   b. The system has a unique solution $(x, y) = (3, -3)$
   c. The system has a unique solution $(x, y) = (3, 3)$
   d. The system has a unique solution $(x, y) = (-3, -3)$

68. A gas station sells regular gas for $2.20 per gallon and premium gas for $2.70 a gallon. At the end of a business day 220 gallons of gas were sold, and receipts totaled $519. How many gallons of each type of gas were sold?

   a. 150 regular, 70 premium
   b. 160 regular, 60 premium
   c. 170 regular, 50 premium
   d. 100 regular, 120 premium

69. Rewrite without exponents $(2b^3)^4$

   a. $2b^7$
   b. $16b^{12}$
   c. $2b^{12}$
   d. $16b^7$

70. Simplify $(3x^2)(9x^{-6})$. Write your answer with a positive exponent only.

   a. $\dfrac{x^4}{3}$
   b. $\dfrac{3}{x^4}$
   c. $27x^4$
   d. $\dfrac{27}{x^4}$

71. Simplify: $\dfrac{t^2}{t^{-8}}$
   Write your answer with a positive exponent only.

   a. $\dfrac{1}{t^6}$
   b. $\dfrac{1}{t^{10}}$
   c. t^6
   d. t^{10}

72. When simplified $2x^{\frac{7}{3}}5x^{-\frac{4}{3}}$ becomes:

   a. $32\,x$
   b. $10x^3$
   c. $32x^4$
   d. $10x$

73. When simplified, $\dfrac{\left(y^{\frac{2}{3}}\right)^2}{y^{\frac{7}{3}}}$ becomes

   a. y
   b. $\dfrac{1}{y}$
   c. y^2
   d. $y^{\frac{10}{3}}$

74. When simplified, $\dfrac{m^{3/4}}{m^{5/4}\,m^{-2}}$ becomes

   a. $m^{3/2}$
   b. $\dfrac{1}{m^2}$
   c. $\dfrac{1}{m^{3/2}}$
   d. $\dfrac{1}{m^{1/2}}$

75. When simplified $\dfrac{5x^3-10x}{5x^3}$ is equivalent to:

   a. $-2x$
   b. $1-\dfrac{2}{x^2}$
   c. $1-2x$
   d. $-\dfrac{2}{x^2}$

76. Solve for x.

$$x^2 + 4x + 3 = 0$$

   a. $x = -4, -3$
   b. $x = -\dfrac{3}{5}$
   c. $x = 1,3$
   d. $x = -3, -1$

77. Solve for x.

$$x^2 - 7x = -6$$

   a. $x = 1,6$
   b. $x = -6, -1$
   c. $x = 1$
   d. $x = 2,3$

78. Solve for x.

$$4x^2 - 12x - 40 = 0$$

   a. $x = -4, 10$
   b. $x = -10, 4$
   c. $x = -2, 5$
   d. $x = -5, 2$

79. Solve for x.

$$2x^2 - 4x - 6 = 0$$

   a. $x = \dfrac{1}{3}, 1$
   b. $x = -1, 3$
   c. $x = 0, \dfrac{1}{3}$
   d. $x = -1, \dfrac{1}{3}$

80. Solve for x, where x is a real number. Simplify your answer as much as possible.

$$x^2 = 25$$

   a. $x = 6$
   b. $x = 5$
   c. $x = -5, 5$
   d. $x = -12.5,\ 12.5$

81. Solve for x.

$$x^3 - 9x = 0$$

   a. $x = -3, 0, 3$
   b. $x = -3, 3$
   c. $x = 0, 9$
   d. $x = 0, 1, 9$

82. Solve for m, where m is a real number. Simplify your answer as much as possible

$$m^2 = 75$$

   a. $m = 15$
   b. $m = 3\sqrt{5}, -3\sqrt{5}$
   c. $m = 3\sqrt{5}$
   d. $m = 5\sqrt{3}, -5\sqrt{3}$

83. Solve for x, where x is a real number. Simplify your answer as much as possible.
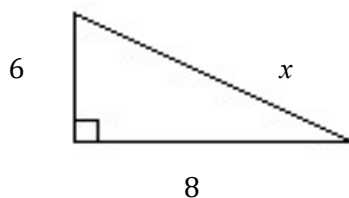
$$(3x + 3)^2 = 36$$

   a. $x = -3, 1$
   b. $x = 0, 1$
   c. $x = -13, 13$
   d. $x = 1, 3$

84. Solve for a, where a is a real number.
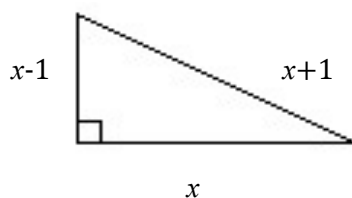   Simplify your answer as much as possible.

$$(a - 7)^2 = 20$$

a. $a = -2\sqrt{5}, 2\sqrt{5}$
b. $a = 7 - 2\sqrt{10}, 7 + 2\sqrt{10}$
c. $a = 7 - 2\sqrt{5}, 7 + 2\sqrt{5}$
d. $a = 2\sqrt{5} - 7, 2\sqrt{5} + 7$

85. The value of x in the right triangle is

a. 12
b. 14
c. 2
d. 10

86. The value of x in the right triangle is

a. 4
b. 5
c. 3
d. 7

87. Find all real and complex solutions of

$$x^2 - 6x + 10 = 0$$

by using the quadratic formula.

a. $x = 1, 5$
b. $x = \frac{3-i}{2}, \frac{3+i}{2}$
c. $x = 3 - i, 3 + i$
d. $x = 6 - i, 6 + i$

88. Find all real and complex solutions of
    $$5m^2 + 5m - 1 = 0$$
    by using the quadratic formula.

a. $x = \frac{-1-3\sqrt{5}}{2}, \frac{-1+3\sqrt{5}}{2}$
b. $x = \frac{5-3\sqrt{5}}{10}, \frac{5+3\sqrt{5}}{10}$
c. $x = \frac{-5-3\sqrt{5}}{10}, \frac{-5+3\sqrt{5}}{10}$
d. $x = \frac{1-3\sqrt{5}}{2}, \frac{1+3\sqrt{5}}{2}$

89. Find all real and complex solutions of
    $$2x^2 - 5x + 4 = 0$$
    by using the quadratic formula.

a. $x = \frac{-5-\sqrt{7}}{4}, \frac{-5+\sqrt{7}}{4}$
b. $x = \frac{-5-i\sqrt{7}}{4}, \frac{-5+i\sqrt{7}}{4}$
c. $x = \frac{5-\sqrt{7}}{4}, \frac{5+\sqrt{7}}{4}$
d. $x = \frac{5-i\sqrt{7}}{4}, \frac{5+i\sqrt{7}}{4}$

90. Simplify
    $$\sqrt{5} \cdot \sqrt{15}$$

a. 75
b. $\sqrt{75}$
c. $5\sqrt{3}$
d. $3\sqrt{5}$

91. Simplify. $\sqrt{\dfrac{32}{50}}$

a. $\dfrac{4}{5}$
b. $\dfrac{2}{5}$
c. $\dfrac{6}{7}$
d. Cannot be simplified

92. Calculate the distance between the
    points $A = (4, 9)$ and $B = (1,5)$

    a. $\sqrt{19}$
    b. 25
    c. 5
    d. $\sqrt{39}$

93. Calculate the distance between the
    points $A = (-4, 5)$ and $B = (1, -3)$

    a. $\sqrt{89}$
    b. $3\sqrt{19}$
    c. $\sqrt{13}$
    d. $\sqrt{21}$

94. Calculate the distance between the
    points $A = (2, -3)$ and $B = (-5, 4)$

    a. $\sqrt{7}$
    b. $\sqrt{14}$
    c. $7\sqrt{2}$
    d. $2\sqrt{7}$

95. Choose the value for which $\frac{2}{a+8}$ is
    undefined.

    a. 0
    b. -8
    c. 8
    d. Never undefined

96. Choose the value(s) for which $\frac{m-2}{m-7}$ is
    undefined.

    a. -7
    b. 7 and 2
    c. 7
    d. Never undefined

97. Choose the value for which $\frac{a-4}{6}$ is
    undefined.

    a. 4
    b. -4
    c. 0
    d. Never undefined

98. Find the least common denominator of
    $\frac{7}{6p}$ and $\frac{15}{4p-8}$

    a. $6p(4p - 8)$
    b. $4(p - 2)$
    c. $24p(p - 2)$
    d. $12p(p - 2)$

99. Find the least common denominator of
    $\frac{14}{27a^3}$ and $\frac{8}{9a-45}$

    a. $27a^3(a - 5)$
    b. $243a^3(a - 5)$
    c. $9a^3(a - 5)$
    d. $27a^3(9a - 45)$

100. Find the least common denominator of
    $\frac{4}{5r-25}$ and $\frac{7}{15r-5}$

    a. $(5r - 25)(15r - 5)$
    b. $5(r - 5)(3r - 1)$
    c. $25(r - 5)(3r - 1)$
    d. $(r - 5)(3r - 1)$

101. Solve for x.

$$\frac{2x}{3} + \frac{2x}{5} = \frac{64}{15}$$

a. $x = 16$
b. $x = 3$
c. $x = 5$
d. $x = 4$

102. Solve for x.

$$\frac{4+x}{6} + \frac{x}{4} = \frac{19}{6}$$

a. $x = 6$
b. $x = 4$
c. $x = \frac{15}{2}$
d. $x = 2$

103. Solve for x.

$$\frac{3}{x-1} + \frac{1}{x} = \frac{7}{2}$$

a. $x = \frac{1}{7}$
b. $x = 2$
c. $x = \frac{1}{7}, 2$
d. $x = \frac{1}{2}, 7$

104.   Solve for m.

$$\frac{8}{2m+4} + \frac{2}{3m+6} = \frac{7}{9}$$

a. $m = 6$
b. $m = 4$
c. $m = 9$
d. $m = 3$

105. Solve the inequality for w. Write the solution set using interval notation.

$$2 - 9w > 14 - 6w$$

a. $(-4, \infty)$
b. $(-\infty, -4)$
c. $[4, \infty)$
d. $(-\infty, 4]$

106. Solve the inequality for x. Write the solution set using interval notation.

$$5x + 3 \leq -12$$

a. $(3, \infty)$
b. $[3, \infty)$
c. $(-\infty, -3]$
d. $(-\infty, -3)$

107. Write the number in scientific notation.

0.000046271

a. 46.271×10^6
b. 46.271×10^{-6}
c. 4.6271×10^{-5}
d. 4.6271×10^5

108. Write the number in scientific notation.

7,250,000,000

a. 7.25×10^9
b. 7.25×10^{-9}
c. 72.5×10^{-8}
d. 72.5×10^8

109. Solve the following proportion for x. Round your answer to the nearest tenth.
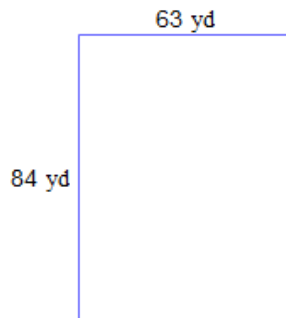
$$\frac{x}{4} = \frac{12}{30}$$

a. $x = 1.6$
b. $x = 10$
c. $x = 0.6$
d. $x = 12$

110. Solve the following proportion for x.

$$\frac{49}{56} = \frac{x}{8}$$

a. $x = 49$
b. $x = 56$
c. $x = \frac{1}{7}$
d. $x = 7$

111. The figure below shows a rectangular parking lot. The lot would be paved. Which measure would be used in finding the amount of pavement needed?
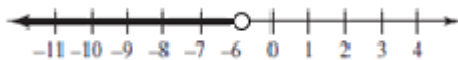
63 yd

84 yd

a. height
b. circumference
c. area
d. perimeter

112. The figure below shows a rectangular lawn. The lot would be surrounded by a rope. Which measure would be used in finding how much rope is needed?
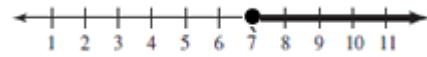
28 ft

17 ft
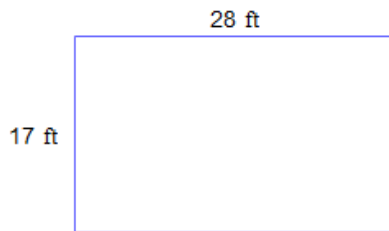
a.   height
b.   circumference
c.   area
d.   perimeter

113. Write an inequality for the graph shown below. Use x for your variable.

$-11 -10 -9 -8 -7 -6\ 0\ 1\ 2\ 3\ 4$
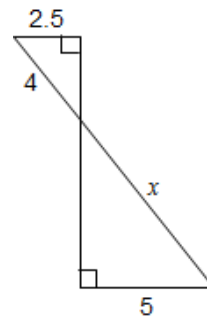
a. $x \geq -6$
b. $x > -6$
c. $x < -6$
d. $x \leq -6$

114. Write an inequality for the graph shown below. Use x for your variable.

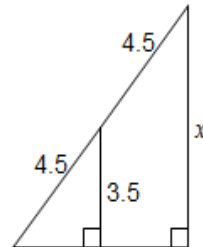$1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11$

a. $x \geq 7$
b. $x > 7$
c. $x < 7$
d. $x \leq 7$

115. For the following similar triangles find the length x.
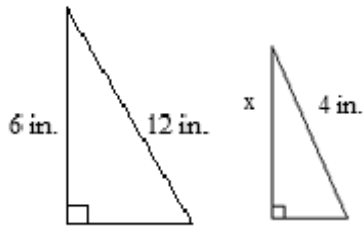
2.5

4

x

5

a. $x = 2$
b. $x = 3.13$
c. $x = 4$
d. $x = 8$

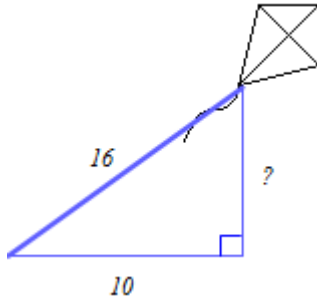116. For the following similar triangles find the length x.

4.5

4.5

3.5

x

a. $x = 3.5$
b. $x = 4$
c. $x = 7$
d. $x = 9$

117. For the following similar triangles find the length x.

6 in.   12 in. x 4 in.

   a. 17.9 in
   b. 8.0 in
   c. 288 in
   d. 2.0 in

118. A kite flying in the air has a 16 ft. line attached to it. Its line is pulled taut and casts a 10 ft. shadow. Find the height of the kite. Round your answer to the nearest tenth.

16   ?   10

   a. $x = 12.5$
   b. $x = 18.9$
   c. $x = 356$
   d. $x = 156$

119. A 6 m tall building casts a shadow. The distance from the top of the building to the tip of the shadow is 8 m. Find the length of the shadow. Round your answer to the nearest tenth.

8   6   ?
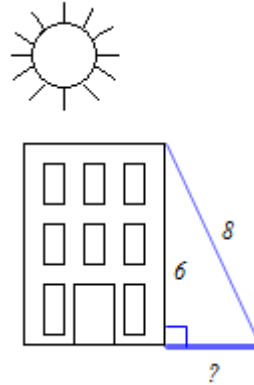
   a. $x = 28$ m
   b. $x = 5.3$ m
   c. $x = 10$ m
   d. $x = 100$ m

KEY

1. C	45. C	89. D
2. A	46. B	90. C
3. D	47. B	91. A
4. B	48. A	92. C
5. C	49. B	93. A
6. D	50. C	94. C
7. A	51. B	95. B
8. D	52. B	96. C
9. D	53. A	97. D
10. C	54. B	98. D
11. C	55. C	99. A
12. C	56. A	100. B
13. A	57. B	101. D
14. C	58. D	102. A
15. C	59. B	103. C
16. A	60. C	104. B
17. C	61. C	105. B
18. A	62. A	106. C
19. D	63. B	107. C
20. A	64. D	108. A
21. D	65. D	109. A
22. B	66. A	110. D
23. A	67. C	111. C
24. C	68. A	112. D
25. D	69. B	113. C
26. D	70. D	114. A
27. A	71. D	115. D
28. B	72. D	116. C
29. C	73. B	117. D
30. B	74. A	118. A
31. B	75. B	119. B
32. A	76. D	
33. B	77. A	
34. D	78. C	
35. B	79. B	
36. C	80. C	
37. C	81. A	
38. B	82. D	
39. A	83. A	
40. B	84. C	
41. D	85. D	
42. B	86. A	
43. A	87. C	
44. A	88. C	