Name _____

Geometry Summer Review Packet

Due the First Week of School

The problems in this packet are designed to help you review topics from previous mathematics courses that are important to your success in Geometry. Please try to do each problem and show the work that goes with that answer. Bring the completed packet with you to your Geometry class the first week of school.

All work should be completed and ready to turn in on the first day of school. This packet will count as part of your first quarter Geometry grade.



SHOW ALL OF YOUR WORK

- I. Determine the slope of the line through each pair of points.
 - 1. (5, 1) and (2, 7) 2. (5, 3) and (-2, 3)

3.
$$\left(-\frac{1}{2}, 2\right)$$
 and $\left(-\frac{3}{2}, 1\right)$ 4. (2, -4) and (2, 6)

5.
$$(-5, 8)$$
 and $(3, 8)$ 6. $(12, -4)$ and $(-9, -7)$

- II. Determine the equation for each line, using the information given.
 - 7. Slope 5, through the point (3, 2)
 - 8. Through the points (0, 2) and (2, 0)
 - 9. Slope -4 and y-intercept 8
 - 10. Parallel to the line y = -2x + 3, and through the point (-2, -1)
 - 11. Through the points (1, 1) and (4, 13)

III. Solve the following for x.

12.
$$5x + 3 = -12$$
 13. $(6x - 8) - (5x + 9) = 3$

14.
$$7x - 8x + 4 = 5x - 2$$
 15. $3(x - 2) = 18$

16.
$$(3x + 2) - 2(x + 4) = 7$$
 17. $\frac{x + 2}{3} = \frac{8}{15}$

18.
$$\frac{18}{x} = 6$$
 19. $\frac{5}{7} = \frac{10}{x+2}$

20.
$$3 - 4x = 10x + 10$$
 21. $3(1 + x) - 5 = 3x - 2$

22.
$$5 - \frac{1}{2}(x - 6) = 4$$
 23. $4(x - 2) = 4x$

24.
$$18 - 3.8x = 7.36 - 1.9x$$
 25. $-3(2x - 5) = \frac{1}{2}(-12x + 30)$

26.
$$\frac{4x+5}{7} = 7$$
 27. $3 - \frac{5}{6}y = 2 + \frac{1}{6}y$

IV. Determine the area and perimeter of the following figures:

- 28. A rectangle with length 3.6cm and width 4.2 cm.
- 29. A square with sides of length 9mm.
- 30. A right triangle with sides 9, 40, and 41.
- V. Using the given information, find the following:
 - 31. Area and circumference of a circle with radius 4 inches.
 - 32. Area and circumference of a circle with radius 12 meters.
 - 33. Area and circumference of a circle with diameter 50 centimeters.
 - 34. Area and circumference of a circle with diameter 26 millimeters.
 - 35. Circumference of a circle with an area of 36π square centimeters.
 - 38. Area of a circle with a circumference of 18π inches.
- VI. Simplify the following.
 - 39. $\sqrt{81}$ 40. $\sqrt{121}$ 41. $\sqrt{625}$

42.
$$x^3 x^5 x^2$$
 43. $\frac{4x^5 y^2}{2x^8 y}$ 44. $(5x^3 y^2)^2$

VII. Identify the following figures by name.



VIII. Factor and/or solve the following.

58.
$$x^2 + 16x + 28 = 0$$
 59. $x^2 - 7x + 10$

60.
$$x^2 - x - 42$$
 61. $x^2 - 22x - 72 = 0$

62.
$$x^2 - x - 56 = 17x$$
 63. $14x + x^2 = 51$

$$64. \ 2x^2 + 7x + 5 \qquad \qquad 65. \ 8x^2 - 6x - 9$$

66.
$$5x^2 + 27x + 10 = 0$$

67. $24x^2 - 11x - 3 = 3x$

$$68. \quad 3x^2 - 25x + 16 \qquad \qquad 69. \quad 6x^2 - 14x = 12$$

70.
$$25x^2 - 36 = 0$$
 71. $144a^2 - 49b^2$

IX. Use your formula sheet to solve the following problems.

72. Find the surface area and volume of a rectangular prism with length 5 cm, width 10 cm, and height 3 cm.



73. Find the surface area and volume of a cube with all sides equal to 8 inches.



74. The volume of a rectangular prism is 960 cm^3 , the height is 5 cm and the width is 12 cm.

a) What is the length of the prism?



75. The surface area of a rectangular prism is 606 inches², the length is 7 inches, and the width is 9 inches.

- a) What is the height of the prism?
- b) What is the volume of the prism?



76. Find the surface area and volume of a cylinder with a radius of 8 cm and a height of 25 cm.



77. Find the surface area and volume of a cylinder with a diameter of 34 inches and a height of 8 inches.



78. The volume of a cylinder with a radius of 9 cm is 1458π cm³.



79. Find the volume of a cone with a radius of 3 inches and a height of 10 inches.

X. Use the figure of parallel lines a and b, cut by transversal c to answer the following:



80. Name all the angles congruent to angle 1.

- 81. Name 2 pairs of alternate exterior angles.
- 82. Name 4 pairs of corresponding angles.

83. If the measure of $\angle 3 = 55^{\circ}$, what is the measure of $\angle 6$? What type of angles are they?

84. If the measure of $\angle 8 = 103^\circ$, what is the measure of $\angle 6$? What type of angles are they?

85. Name 4 pairs of vertical angles.

86. If the measure of angle 2 is 3x + 7 degrees and the measure of angle 7 is 5x - 23 degrees, what is the measure of angle 1?

87. If the measure of angle 5 is 6x + 8 degrees and the measure of angle 6 is 12x + 10 degrees, what is the measure of angle 3?