

Name \_\_\_\_\_

## Summer Packet For Students Entering Hrs Geometry

**Arithmetic Skills: Perform the indicated operations and simplify completely.**

1.  $\frac{7}{6} + \frac{11}{6} =$

2.  $\frac{3}{5} - \frac{1}{7} =$

3.  $\frac{5}{2} + \frac{11}{9} =$

4.  $\frac{3}{5} - \frac{9}{6} =$

5.  $\frac{3}{8} \times \frac{5}{2} =$

6.  $\frac{3}{4} \div \frac{2}{5} =$

7.  $\left(\frac{3}{14}\right)\left(\frac{8}{9}\right) =$

7.  $\frac{15}{4} \div \frac{25}{18} =$

8.  $4.59 + 1.04 =$

9.  $7.86 - 1.18 =$

10.  $0.51 \cdot 2.6 =$

11.  $4.8 \div 0.6 =$

**Pre – Algebra Skills: Perform the indicated operations and simplify completely.**

1.  $(8a + 9b + 3c) - (2a - 3b - c)$

2.  $(7x^2 + 3x - 15) + (2x^2 - 2x + 3)$

3.  $(12x^2 - 5x + 1) - (2x^3 + 2x^2 - 3x)$

4.  $5x(2x^2 + 3x + 4)$

5.  $3^4 =$

6.  $(-2)^5 =$

7. Write an expression for 7 less than the product of 5 and x.

8. Write an expression for the quotient of x and 11.

9. Write an expression for 12 more than the product of -2 and the square of x.

10. If  $x = 2$  and  $y = 9$ , compute the quotient of  $\frac{27x}{y}$ .

**Algebra Skills: Solve for x.**

1.  $x - 3 = 9$

2.  $x + 5 = 14$

3.  $5x = 125$

4.  $\frac{x}{7} + 8 = 2$

5.  $(x - 2)(x + 5) = 0$

6.  $x^2 - 7x + 12 = 0$

**Algebra Skills: Perform the indicated operations and simplify completely.**

1. Simplify  $\sqrt{48}$

2. Factor completely:  $2x^2 + 7x + 5$

3. Simplify  $\frac{-12xy^7}{9x^4y^2}$

4. Simplify  $(2x^3)^4$

**Geometry Skills: Perform the indicated operations and simplify completely.**

1. What formula do you use to find the area of a circle?

2. What formula do you use to find the circumference of a circle?

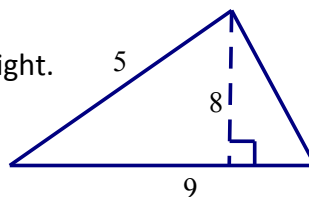
3. Find the area of a circle with a diameter of 8 cm. Leave your answer in terms of  $\pi$ .

4. Find the perimeter of a rectangle with a length of 20 ft. and a width of 3 ft.

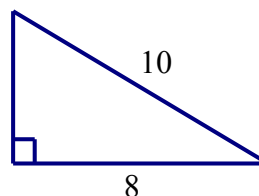
5. If the perimeter of a square is 20 inches, find its area.

6. If the perimeter of a rectangle is 52 inches and the width is 7 inches, find its length.

7. Find the area of the triangle to the right.



8. Find the missing side of the triangle to the right.



## THE QUADRATIC FORMULA

You have used factoring and the Zero Product Property to solve quadratic equations. You can solve any quadratic equation by using the **QUADRATIC FORMULA**.

$$\text{If } ax^2 + bx + c = 0, \quad \text{then } x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}.$$

For example, suppose  $3x^2 + 7x - 6 = 0$ . Here  $a = 3$ ,  $b = 7$ , and  $c = -6$ .

Substituting these values into the formula results in:

$$x = \frac{-(7) \pm \sqrt{7^2 - 4(3)(-6)}}{2(3)} \Rightarrow x = \frac{-7 \pm \sqrt{121}}{6} \Rightarrow x = \frac{-7 \pm 11}{6}$$

Remember that non-negative numbers have both a positive and negative square root.

The sign  $\pm$  represents this fact for the square root in the formula and allows us to write the equation once (representing two possible solutions) until later in the solution process.

Split the numerator into the two values:  $x = \frac{-7 + 11}{6}$  or  $x = \frac{-7 - 11}{6}$

Thus the solution for the quadratic equation is:  $x = \frac{2}{3}$  or  $-3$ .

Use the quadratic formula or factor to solve each of the following equations.

1.  $x^2 - x - 6 = 0$

2.  $x^2 + 8x + 15 = 0$

3.  $4x^2 - 9x + 4 = 0$

4.  $2x^2 - 5x + 2 = 0$

5.  $13x^2 - 16x = 4$

6.  $8x^2 - 50 = 0$

**Geometry Terms: Perform an internet search and define the term.**

1. Point:

2. Line:

3. Line Segment:

4. Ray:

5. Plane:

6. Angle:

7. Parallel Lines:

8. Perpendicular Lines:

9. Perimeter:

10. Circumference:

11. Area:

12. Volume:

13. Congruent:

14. Right Triangle: