

# **Trumbull High School**

## **Summer Review Packet**

### **For Students Entering CP or ACP Geometry**

This packet is based on mathematical concepts that were mastered in Algebra I. All students entering CP or ACP Geometry should be able to answer the problems in this packet. For help with any concepts, please check out the following resources:

Khan Academy     <https://www.khanacademy.org/>

Purplemath     [www.purplemath.com](http://www.purplemath.com)

Students should be able to:

- Simplify expressions using order of operations
- Translate written expressions to algebraic expressions
- Evaluate an expression
- Solve equations
- Solve a system of equations
- Find the slope of a line that contains two points
- Solve quadratic equations by factoring

**This packet should review core Algebra I skills that you will need to be successful in Geometry.  
Please complete over the summer and bring with you on your first day!**

**Simplify each expression.**

1.  $3x^2 + xy - 6y^2$  when  $x = -4$  and  $y = \frac{1}{2}$

2.  $[2^3 + 4(7 - 3)] \div 8$

3. 
$$\frac{(-5)(-2) - 4}{-4\left(\frac{1}{3}\right)}$$

4. 
$$\frac{-(-5) \pm \sqrt{5^2 - 4(1)(-6)}}{2(1)}$$

5.  $2(7g - 4h) - 6(5h - 3g)$

6.  $(3x + 5)(2x - 4)$

7.  $(2x - 5)^2$

**Solve for the variable. Show all work/steps!**

8.  $75 = 3(-6n - 5)$

9.  $-4x + 2(5x - 6) = -3x - 39$

10.  $-16 + 5n = -\frac{1}{2}(-6 + 8n) + 3$

11.  $12(2k + 11) = 12(2k + 12)$

12.  $4(-x - 6) + 3 = -2(2x + 14) + 7$

13.  $5(3z - 7) = 4(2z + 7)$

$$14. 5 - 3(2n - 3) = 44$$

$$15. \frac{1}{3}(2x - 4) + 5 = -\frac{2}{3}(x + 1)$$

$$16. \frac{5}{x} = \frac{3}{2}$$

$$17. \frac{-4}{2r - 9} = \frac{-16}{3r + 14}$$

$$18. \frac{x}{x + 5} = \frac{x - 4}{x}$$

$$19. \frac{x - 3}{x} = \frac{9}{10}$$

Solve each system of equations (use an algebraic method like substitution or elimination).

20. 
$$\begin{aligned}y &= x - 3 \\x + y &= 13\end{aligned}$$

21. 
$$\begin{aligned}4(e + f) &= 8(f - 4) \\2(e - 1) &= f - 15\end{aligned}$$

22. 
$$\begin{aligned}2x - 3y &= -1 \\y &= x - 1\end{aligned}$$

23. 
$$\begin{aligned}-7x - 2y &= -13 \\x - 2y &= 11\end{aligned}$$

24. 
$$\begin{aligned}2x - 8y &= 6 \\-5x - 20y &= -15\end{aligned}$$

Solve each quadratic equation by factoring.

25.  $y^2 - 9 = 0$

26.  $w^2 + 3w = 10$

27.  $3v^2 = v + 10$

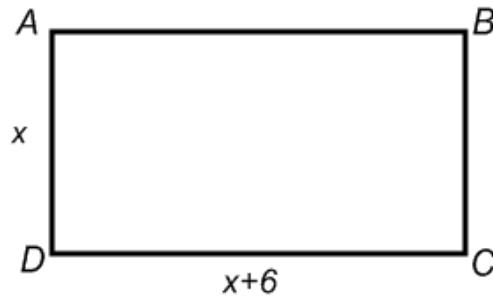
28.  $x^2 - 15x = -50$

29.  $3p^2 - 2p - 5 = 0$

30.  $2x^2 + 11x + 5 = 0$

31.  $7x^2 + 53x + 28 = 0$

Use rectangle  $ABCD$  to answer examples 32-36.



32. Write the equation that shows the perimeter of the rectangle is 48 inches.
33. Solve for  $x$ .
34. Find the area of the rectangle.
35. Based on the figure above, write the equation that shows the area of the rectangle is 72 square inches.
36. Find the dimensions of the rectangle based on your findings in #45.