

Students enrolled in Geometry/Geometry Honors 2020-2021

Summer Packet

Name: _____

This packet is to help you review various topics that are considered to be prerequisite knowledge upon entering Geometry. In order to ensure that the good skills that you developed in your Algebra I course do not disappear this summer, working on this packet is highly recommended over the summer. (A good habit would be to do at least one math problem every day.) Enjoy your summer, but be sure to come prepared with the necessary knowledge to continue on into Geometry next year. There will be a skills quiz on these topics in the fall.

I. Linear Equations

Solve each equation for the indicated variable.

1. $19 = a - 4$

2. $17 = 5 - 3p$

3. $-\frac{3}{4}x - 2 = -8$

4. $\frac{x}{4} = 5$

5. $-4y - (5y + 6) = -7y + 3$

6. $\frac{4}{x} = 5$

7. Write the equation in slope-intercept form of the line with slope 3 and y-intercept 4.

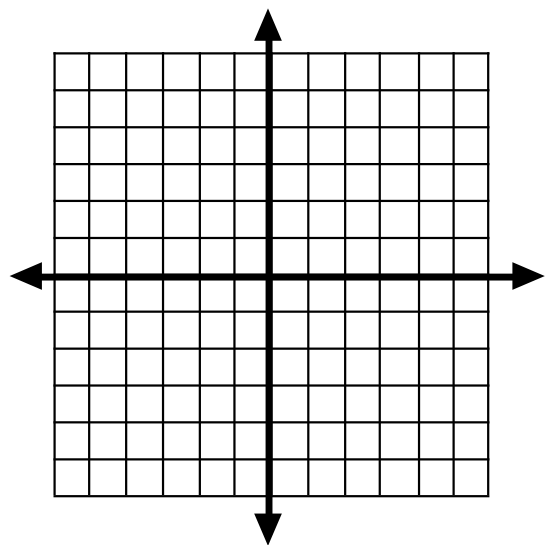
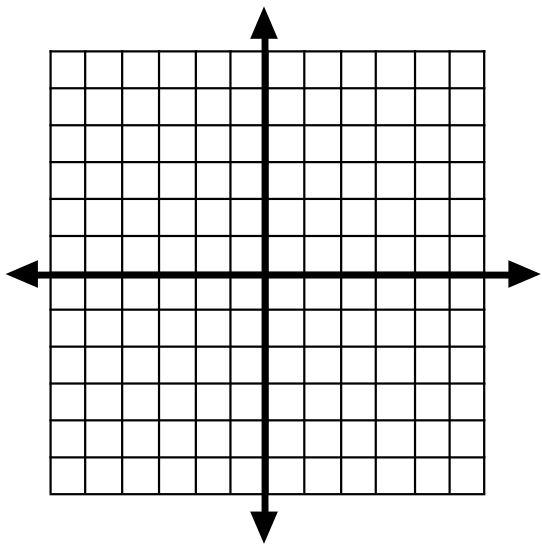
8. Write the equation in slope-intercept form of the line with slope 3 that passes through the point (2, -1).
9. Write the equation in slope-intercept form of the line that passes through (3, 2) and (5, 1).
10. Write the equation of the line in STANDARD FORM (with integer coefficients) that passes through (-4, 5) and (1, 4).
11. Write the equation of the line that passes through (2, 3) and (-2, 3).
12. Write the equation of the vertical line through (1, 5).
13. Find the slope of the line that is perpendicular to $y = -2x + 3$.
14. Find the slope of the line that is parallel to $y = -2x + 3$.

15. Write the equation of a line that contains the point (2, 6) and is parallel to $y = 3x - 5$. Use point-slope form of an equation. (Honors only)

16. Write the equation of a line that contains the point (-5, 2) and is perpendicular to $y = -\frac{1}{5}x + 3$. Use point-slope form of an equation. (Honors only)

17. Sketch the graph of $y = \frac{1}{3}x - 4$.

18. Sketch the graph of $3x + 2y = 6$



II. Systems Show all work for the following problems.

1. Solve by substitution: $x = -3y + 9$
 $4x - 2y = -6$

2. Solve by elimination/linear combinations: $2x - 15y = -10$
 $-4x + 5y = -30$

3. Solve by any method: $y = x + 3$
 $y = -x + 7$

III. Simplifying Simplify each as much as possible, use simplest radical form when necessary.

1. $\frac{2}{3} + \frac{1}{2}$

2. $\frac{3}{4} \cdot -\frac{2}{3}$

3. $-\frac{4}{9} \div 18$

(Honors only #4-6)

4. $\sqrt{24}$

5. $\sqrt{27}$

6. $\sqrt{75}$

IV. Quadratics

Factor each expression completely.

1. $x^2 + x - 12$

2. $2x^2 - 9x + 4$

3. $2x^2 + 14x + 12$

Solve each quadratic equation by factoring: (Honors only this entire section)

4. $x^2 + 8x - 9 = 0$

5. $x^2 + 7x + 10 = 0$

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

7. $2x^2 + 11x + 5 = 0$

8. $3t^2 + 16t = -5$

Solve each quadratic equation by using the quadratic formula, leave the solution in simplest radical form. (Honors only)

9. $2x^2 - 3x - 8 = 0$

10. $7x^2 + 8x = -1$

11. Solve using the quadratic formula, leave the solution in simplest radical form. (Honors only)

$$x^2 - 2x - 5 = 0$$

V. Proportions Solve each proportion.

1. $\frac{3}{y} = \frac{5}{8}$

2. $\frac{6}{3} = \frac{x+8}{-1}$

$$3. \quad \frac{8}{x+2} = \frac{3}{x-1}$$

$$4. \quad \frac{x}{3} = \frac{12}{x}$$

$$5. \quad \frac{2}{6x+1} = \frac{2x}{1} \text{ (Honors Only)}$$