

## Summer Work for Algebra 2 Honors

**Instructions:** It's expected that all of this material is review of courses you have already taken and presumed passed! This is an **INDIVIDUAL** assignment. However, if you are still confused, unsure, or stressed out and need guidance please email me [rmulhern@holycrosshs-ct.com](mailto:rmulhern@holycrosshs-ct.com) with any questions. I will be checking my email constantly over the next month expecting there are going to be places where you get confused.

\*For those who skipped or didn't take Algebra 1 Honors, you will experience increased difficulty than you're probably used to. Email me, discuss with each other, look online (caution there on methods used).

**Grading:** This packet will count as a 25 point Quiz and is due the **First** day of class. It will be followed by a test within the first week or two of classes. This acts as review for first test. Here's layout of first few classes.

Class 1: expectations, turning in summer work.

Class 2: return/review summer work, extended examples and notes

Class 3: Finish all example notes and review. Take home portion of Test 1.

Class 4: Test- Solving equation/inequalities and absolute values.

**Notes:** Given below is the accompanying notes that would have been taught for this lesson during Algebra 1 Honors here. For those who need to review them, forgot some details, or didn't take algebra here. Examples aren't given, but steps, process, rules and things to recall are.

### **Solving Equations:**

**Step 1.** Simplify each side of equation by:

Clear fractions, LCD

Distribute

Combine like terms

**Step 2.** Move all variables to one side

Inverse operations

Combine like terms

**Step 3.** Isolate variable

Inverse operation

solve

**Step 4.** Check

Substitute and solve

Other notes: Special solutions, variables in denominators

### **Solving and Graphing inequalities:**

**Step 1.** Solve like equations except:

When multiple/divide by negative flip the inequality sign

“and” statements

“or” statements

**Step 2.** Graph solution on the number line:

$<, >$  open circles (doesn't include value)

$\leq, \geq$  closed circles (does include value)

**Step 3.** Determine and write the solution for compound and/or statements using inequality notation

**Step 4.** Check

Substitute points into solution(s) to check

**Solving absolute value equations and inequalities:**

**Step 1.** Simplify, LCD Don't change absolute value!

**Step 2.** Isolate the absolute value

**Step 3.** Split into 2 statements:

$$|x| = a \text{-----} > x = a \text{ or } x = -a$$

$$|x| \geq 3 \text{-----} > x \geq a \text{ or } x \leq -a$$

$$|x| \leq 3 \text{-----} > |x| \leq a \text{ and } |x| \geq -a$$

**Step 4.** Solve and graph

Name: \_\_\_\_\_

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1. Solve:  $\frac{2x-5}{4} - \frac{x+6}{2} = \frac{5x}{8} - 1$

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2. Solve for y:  $\frac{ay-b}{c} = \frac{2y+b}{d}$

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3. Solve:  $\frac{2x+5}{3} - \frac{3x-2}{4} = \frac{x+1}{2} + \frac{4-5x}{6}$

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4. Solve for x:  $\frac{ax-3p}{p-1} = \frac{5}{6}$

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5. Solve for p:  $\frac{2p}{3} = \frac{wp+1}{5}$

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6. Solve:  $2x - 3(4x + 5) + 8 = 16 - (7x + 1)$

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7. Solve:  $\frac{x-5}{12} - \frac{x-3}{8} = 1 - \frac{2x}{3}$

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8. Simplify:  $(3x - 2)(4x + 1) + (6x + 2)^2$

9. Solve and graph:  $-2[3 - (4x + 2)] < 6(x - 4) + 6$

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10. Solve and graph:  $\frac{3x-4}{6} - \frac{1-2x}{3} \geq \frac{x}{2} + 2$

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11. Solve and graph:  $3(x - 3) + \frac{2x+4}{2} \leq 7(x + 3) - \frac{15(x+4)}{3}$  or  $\frac{1}{x+3} > \frac{2}{4-x}$

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12. Solve and graph:  $-3(x + 2) \leq \frac{5}{2}(x + 2) < 2 + 2(4 + x)$

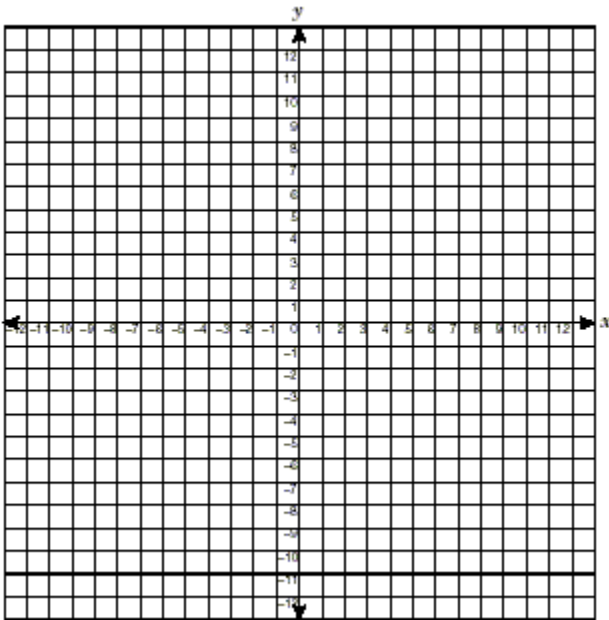
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13. Solve and graph:  $4 + 2 \left| \frac{3x-5}{2} \right| > 5$

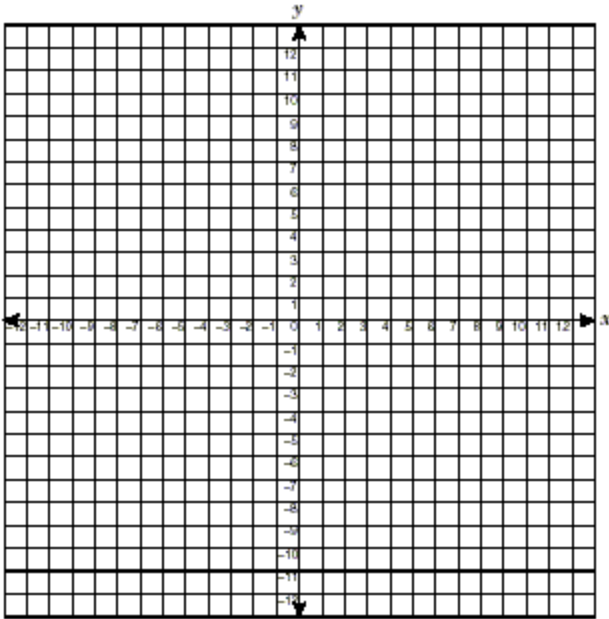
14. Solve and graph:  $4 - |3k + 1| \geq 2$

15. Solve and graph:  $|a + 3| \leq 5$  and  $|8 - a| > 2$

16. Graph the line  $2x - 3y = 9$



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17. Graph the line  $y = -\frac{5}{2}x + 2$



18. Is the line  $x = -1$  vertical or horizontal? \_\_\_\_\_
19. Is the line  $y = 7$  vertical or horizontal? \_\_\_\_\_
20. What is the slope of the line  $5x + 7y = -10$ ?
21. What is the x-intercept of the line  $4x - y = 8$ ? Give your answer as an ordered pair.
22. What is the y-intercept of the line  $3x + 6y = 4$ ? Give your answer as an ordered pair.

23. What is the slope of the line through the points  $(7, -2)$  and  $(5, 12)$ ?
24. Write the equation of the line through the points  $(3, 6)$  and  $(2, -1)$  in slope-int form.
25. Write the equation of the line parallel to  $y = 3x - 6$  and through the point  $(4, 7)$  in slope-intercept form.
26. Write the equation of the line perpendicular to  $y = -2x + 3$  and through the point  $(7, -2)$  in slope-int form.



