

Algebra 2 Honors  
Summer Work Packet

# Algebra 2 Honors Summer Work Packet

## **Welcome to Algebra 2 Honors!**

This course is a fast-paced, rigorous course in which you will study functions and their relationships in depth. You will often work with your table-mates to discover key concepts. Persistence and dedication are the keys to success in this course; however, knowing when to trust your abilities to work through a difficult problem and when to ask for help are also crucial. The work in this packet will prepare you to begin the Algebra 2 Honors course. Please ensure that you understand each concept thoroughly and can solve problems, including word problems, with these skills.

You **required summer assignments** are as follows:

- 1) Sign up for or log onto Khan Academy. Add me as a coach by selecting me from the coaches' list or by using class code **ADP9SQV6**. The class is named *Algebra 2 Honors*. This will be a resource for you to review the material in this packet prior to completing the problems.
- 2) Complete the work in this packet.**
- 3) Purchase a TI-34 Multiview or a TI-30 XS Multiview calculator. (You may email me at [eraskin@latinpcs.org](mailto:eraskin@latinpcs.org) a picture or a link prior to purchasing, if you would like to verify that you are purchasing the correct calculator.)
- 4) Purchase a 3-ring binder with extra lined paper and graph paper. You will need this in class daily.

**Solve all problems. Show all of your work.** Refer to the Khan Academy videos if you have questions about any of the material. You will use these skills every day in class, so make sure that you completely understand them and can solve problems without help.

**Solving linear equations**

1)  $6b + 12.5 = 15.5 + 8b$

2) Ms. Smith had 70 stickers to give to students. She gave 3 to each student and still had 5 left. How many students were there? Write an equation to find the number of students who got stickers.

3)  $5r - 12 + 4r = 3r + 8$

4)  $4(-g + 7) = -(g - 8)$

5)  $12v - 8 = 16(4 + \frac{1}{2}v)$

**Linear equations with unknown coefficients**

6) Solve for h.

$$45 + 7h = 9h + qh$$

**Linear equations word problems**

- 7) The sum of 4 consecutive odd integers is 64. Find the third number in this sequence.

**Analyze the number of solutions to a system of equations**

- 8) How many solutions does the following equation have?  
 $12z + 8 = 2(6z - 7)$

**x-intercepts and y-intercepts**

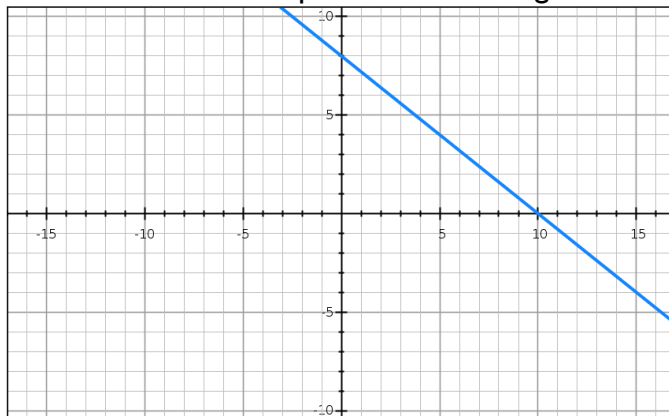
- 9) Determine the intercepts of the line that correspond to the following table of values

x	y
10	4
20	-2
50	-20

x-intercept (\_\_\_\_, \_\_\_\_)

y-intercept (\_\_\_\_, \_\_\_\_)

- 10) Determine the intercepts of the following line.



x-intercept (\_\_\_\_, \_\_\_\_)

y-intercept (\_\_\_\_, \_\_\_\_)

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11) Determine the intercepts to the line  $y = 4x + 15$ .

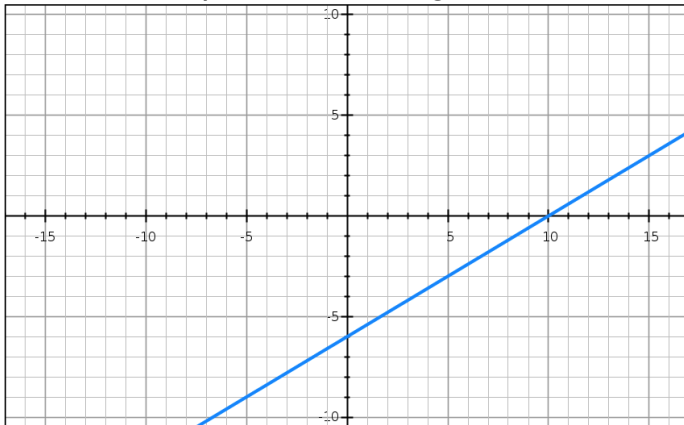
x-intercept (\_\_\_\_, \_\_\_\_)

y-intercept (\_\_\_\_, \_\_\_\_)

**Slope**

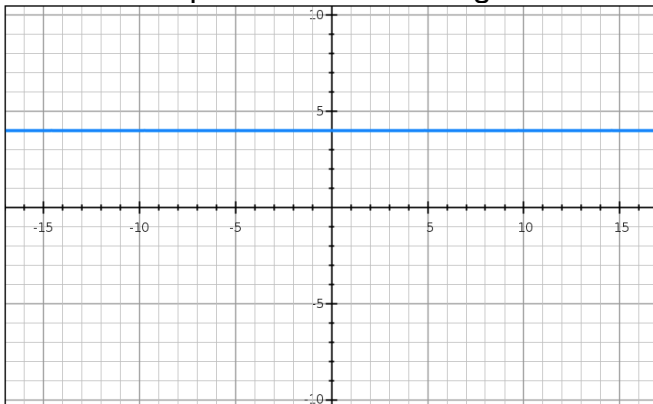
12) What is the slope of the line through the points (5, -10) and (8, 25)?

13) What is the slope of the following line?



**Horizontal and vertical lines**

14) What is the equation of the following line?

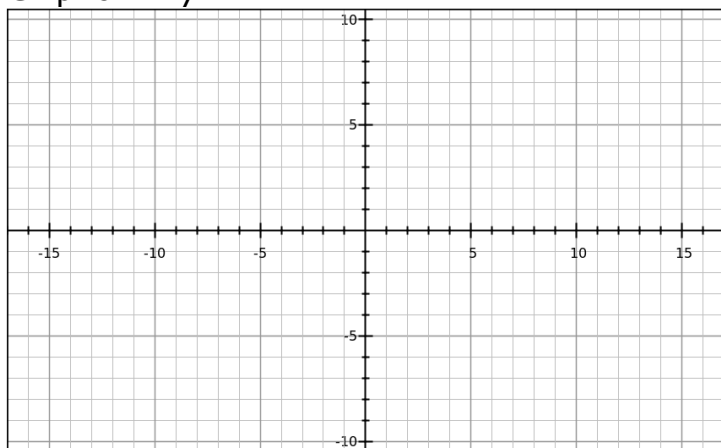


**Writing the equations of and graphing lines**

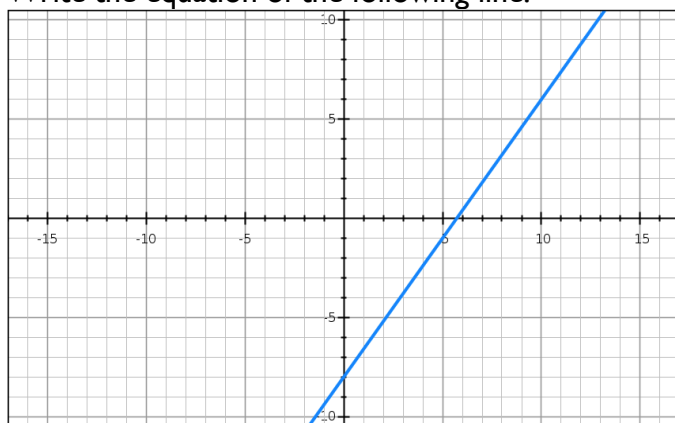
15) Write  $2y + 5 = -3(x - 10)$  in standard form.

16) What is the slope of the line  $2y + 5 = -3(x - 10)$ ?

17) Graph  $3x + 4y = 12$



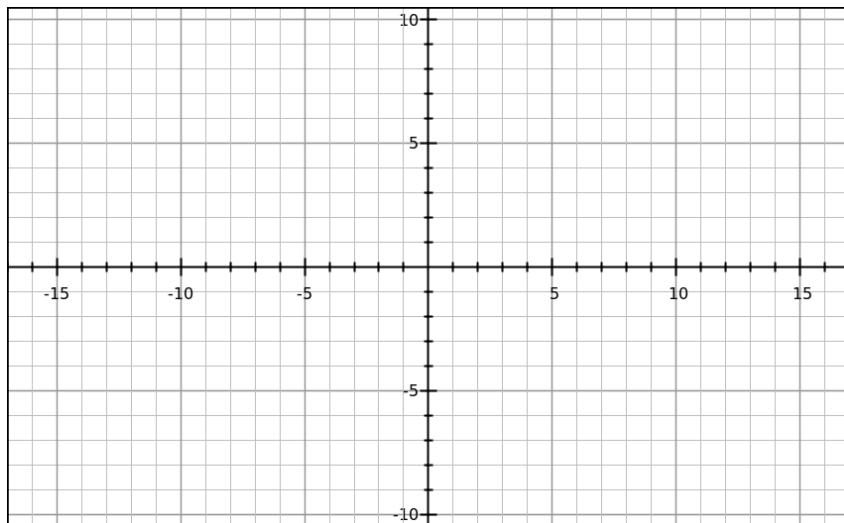
18) Write the equation of the following line.



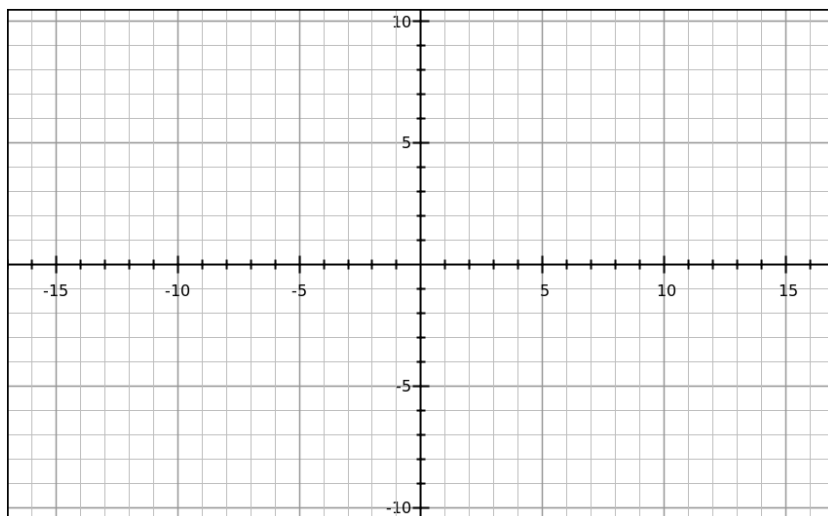
**Solving systems of equations**

Solve the following systems of equations by graphing.

19)  $y = x + 2$   
 $y = 3x - 2$

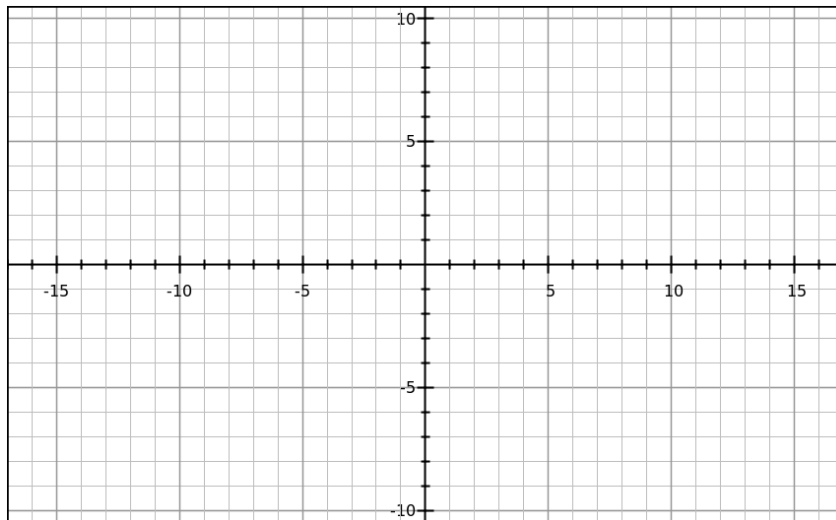


20)  $y = 2x + 3$   
 $y = 2x + 1$



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$$21) \begin{aligned} y &= -3x + 4 \\ y + 3x &= -4 \end{aligned}$$



Solve the system of equations by using either substitution or elimination.

$$22) \begin{aligned} y &= -x - 6 \\ y &= x - 4 \end{aligned}$$

$$23) \begin{aligned} y &= 3x - 2 \\ x - y &= 4 \end{aligned}$$

$$24) \begin{aligned} y &= 2x - 10 \\ y &= 4x - 8 \end{aligned}$$



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$$25) \begin{aligned} 2y &= 2x + 12 \\ y &= -2x - 3 \end{aligned}$$

$$26) \begin{aligned} 4x + 3y &= -5 \\ -2x + 2y &= 6 \end{aligned}$$

$$27) \begin{aligned} 8x + 3y &= 13 \\ 3x + 2y &= 11 \end{aligned}$$

$$28) \begin{aligned} 5x + 4y &= -7 \\ -5x - 2y &= 1 \end{aligned}$$