

# **Geometry Levels 2 and 3**

## **Summer Packet**

**This packet of exercises reflects skills that the Math Department considers essential for your success in Geometry!**

**In this packet you will find the following:**

- Questions on material previously learned. (Some material you may not have seen due to adjustments made during virtual learning)
- Topics from Khan Academy referenced in the directions for each problem set. If you are having difficulty recalling how to do a specific type of problem, the Khan Academy videos are an excellent resource for re-teaching. Go to [www.khanacademy.org](http://www.khanacademy.org), type in the phrase provided, and it will take you to a video(s) about the topic. Khan Academy also provides further practice on the topics that you can do for your own self-assessment.

**Your Responsibility is to:**

- DO YOUR BEST to complete all problems and show all necessary work **clearly and carefully**
- Turn in the packet on **THE FIRST DAY OF SCHOOL!** It will be collected and checked for completion on the first day of school.

**You will be tested on the material within the first two weeks of school.**

**Have a great summer!**

## Algebra 1 Summer Review (2020-2021)

Date \_\_\_\_\_

**Solve each equation. (Khan Academy Video: Variables on both sides)**

1)  $-\frac{3}{2}\left(3v + \frac{5}{2}\right) = -\frac{251}{36} + \frac{1}{3}v$

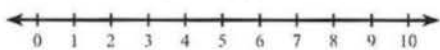
2)  $-\frac{4}{3}\left(-\frac{3}{2}x + \frac{3}{2}\right) - \frac{4}{3} = -3\frac{1}{3}x - \frac{34}{3}$

3)  $5(1 + 2k) = 3 + 7(8 + 4k)$

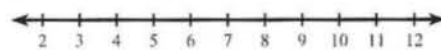
4)  $-3x - 2x = 8(4 - 2x) + 8(x - 1)$

**Solve each inequality and graph its solution. (Khan Academy Video: Two Step Inequality example)**

5)  $-190 > -5(8n + 6)$



6)  $-6(-3 - 5x) < 228$



**Solve each proportion. (Khan Academy Video: Proportions 2)**

$$7) \frac{8}{b-1} = \frac{11}{b+2}$$

$$8) -\frac{5}{11} = \frac{5b-4}{2b+12}$$

**Solve each system by substitution. (Khan Academy Topic: Solving Linear Systems by Substitution)**

$$9) \begin{aligned} 4x + y &= 4 \\ -3x - 2y &= 7 \end{aligned}$$

$$10) \begin{aligned} 2x - 8y &= 12 \\ -3x - 2y &= 24 \end{aligned}$$

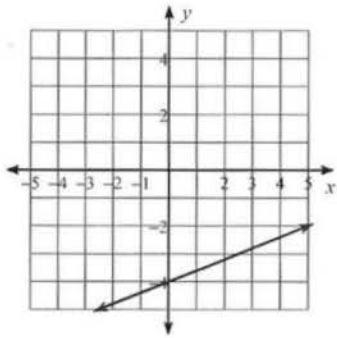
**Solve each system by elimination. (Khan Academy Topic: Solving Linear Systems by elimination and Solving Linear Systems by Multiplication)**

$$11) \begin{aligned} 6x + 4y &= 18 \\ -6x - 3y &= -18 \end{aligned}$$

$$12) \begin{aligned} 3x - 2y &= -11 \\ 5x - 3y &= -20 \end{aligned}$$

Write the slope-intercept form of the equation of each line given the information provided.(Khan Academy Topic:Constructing equations in slope intercept form - there are multiple videos on this topic, Also see equations of parallel and perpendicular lines)

13)



14)  $4x + 3y = 22$

15)  $y - 3 = 3(x - 4)$

16) Slope =  $-\frac{1}{2}$ , y-intercept =  $-1$

17) through:  $(3, -1)$ , slope =  $-\frac{2}{3}$

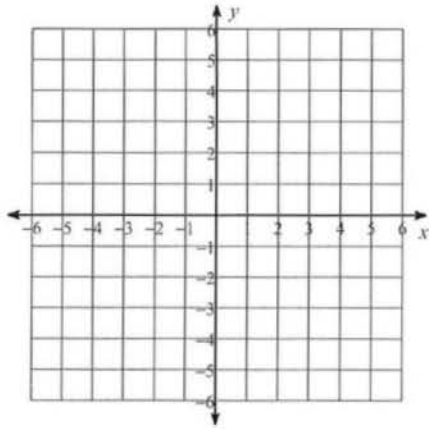
18) through:  $(-5, 2)$  and  $(4, -4)$

19) through:  $(-1, 4)$ , parallel to  $y = -2x - 5$

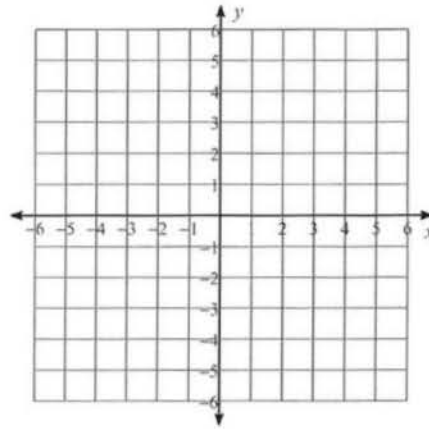
20) through:  $(1, -1)$ , perp. to  $y = \frac{1}{4}x + 4$

Sketch the graph of each line. (Khan Academy Topic: Graphing linear equations in slope intercept form)

21)  $3x + y = -4$



22)  $x = 4$



Simplify each expression. (Khan Academy Topic: Addition and subtraction of polynomials)

23)  $-3(b - 3) + 3(4b + 3)$

24)  $7(6r + 8) - 5(1 + 8r)$

Evaluate each function. (Khan Academy Video: Evaluating with function notation)

25)  $p(t) = 2t + 4$ ; Find  $p(2)$

26)  $p(n) = -n^2 + 5n$ ; Find  $p(-3)$

27)  $p(x) = x^2 + 5$ ; Find  $p(-5)$

Evaluate each expression. (Khan Academy Video: Adding and subtracting fractions)

$$28) 1\frac{2}{3} + \left(-1\frac{6}{7}\right) + 3 + 2$$

$$29) 2\frac{1}{4} - \frac{1}{4} + \left(-2\frac{5}{6}\right) + 3\frac{1}{4}$$

Find each quotient. (Khan Academy Video: Multiplying and dividing fractions)

$$30) \frac{3\frac{3}{4}}{\frac{4}{5}}$$

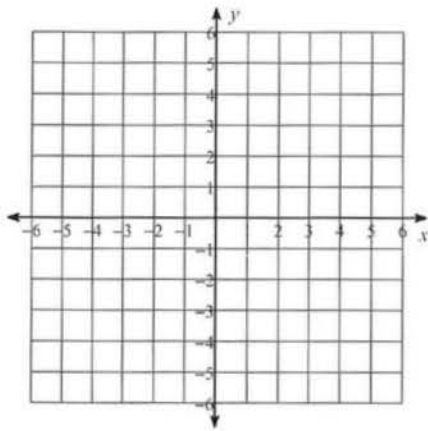
$$31) \frac{-2}{\frac{1}{4}}$$

Evaluate each using the values given. (Khan Academy Video: Evaluating expressions in one variable)

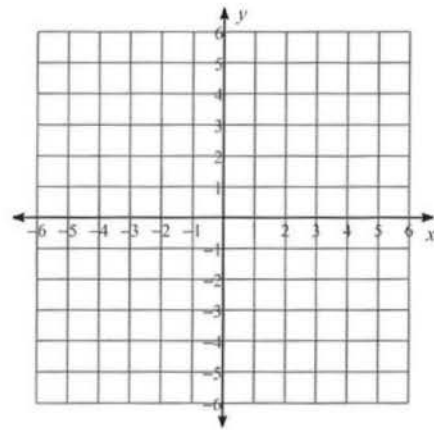
$$32) yx - x - (x^2 + y); \text{ use } x = -3, \text{ and } y = -13$$

Sketch the graph of each line. (Khan Academy Topic: Graphing Linear Equations)

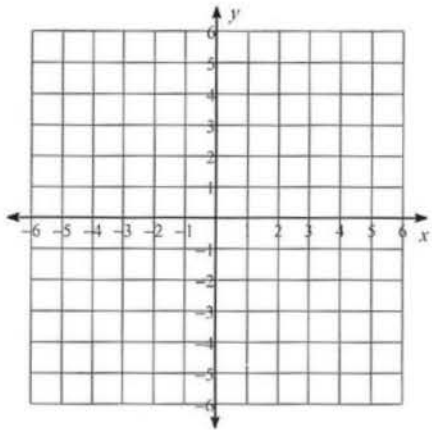
33)  $y = -\frac{3}{5}x - 4$



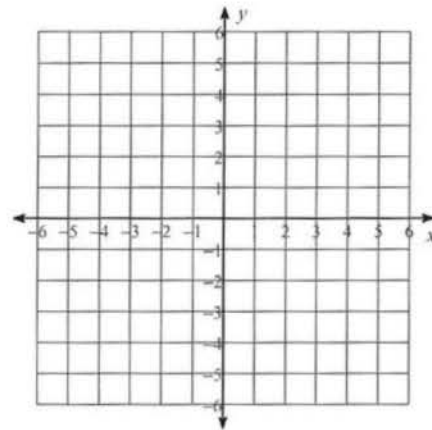
34)  $4x - 3y = 6$



35) x-intercept = -4, y-intercept = 2

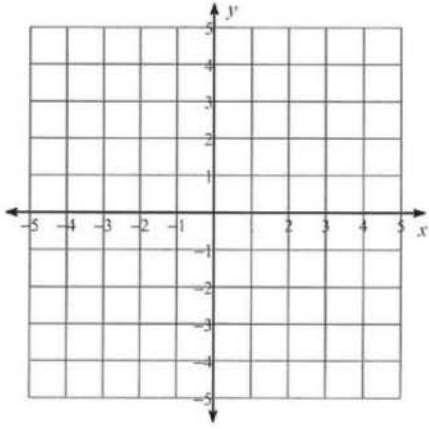


36)  $10y - 4x - 10 = 0$



Solve each system by graphing. (Khan Academy Topic: Graphing Systems of Equations)

37)  $y = x - 4$   
 $y = -\frac{5}{2}x + 3$



38)  $y = \frac{1}{4}x + 4$   
 $y = -\frac{3}{2}x - 3$

