FHS Honors Geometry
Summer Packet 2019

Name _____

Memo to students:

Geometry builds on several skills that you have learned in previous math courses. This packet covers the most important algebra skills that are needed for Honors Geometry. It is highly recommended that you use some time over the summer to complete the following problems **WITHOUT a calculator**. There may be a short quiz that covers the information from this packet after the first week of school. There is a QR code on each page for the odd answers.

If you have difficulty or questions, please refer to the provided resources to assist you.

Regards,
FHS Geometry Teachers

I. Do you remember how to evaluate expressions?

Directions: Evaluate each expression for the given value of the variable.
For Help: https://www.youtube.com/watch?v=WJqw-cxvKgo

1. Evaluate $3a^2+5ab$ when a = -3 and b = -1.
2. Evaluate $30-x-|-4|$ when x = -3.
3. Evaluate $5x+\sqrt[3]{x}$ when x = 8.
4. Evaluate $\frac{1}{7}x-(3x+2)$ when x = 49.
5. Evaluate $20+3\sqrt{x}-8$ when x = 100.
6. Evaluate $(8+x)^2+(x-7)^2$ when x = 4.
7. Evaluate $\sqrt{x-9}+4$ when x = 34.
8. Evaluate $15x+9x+3x$ when $x=\frac{1}{3}$

II. Do you remember how to solve linear equations?
For Help: https://www.youtube.com/watch?v=gSWTqZrC7Ac&t=1s

Directions: Solve each equation.

9. $16=\frac{3}{4}x+1$	10. $-7x=-12x-65$
11. $\frac{1}{2}(x-16)=7$	12. $5x+5(1-x)=x+8$
13. $-(4x-8)=2(x+4)$	14. $3x^2-12x=0$
15. $2x^2+7x-12=x^2+10x-2$	16. $\frac{2x+4}{4}=\frac{3x-4}{2}$

III. Do you remember how to simplify radical expressions and solve equations using square roots?

For Help: https://www.youtube.com/watch?v=u2Z1hoXSrXk

Simplify the radicals. Write your answer in the simplest radical form or as a whole number. NO decimals!

17. $\sqrt{50}$

18. $\sqrt[3]{64}$

19. $5\sqrt{12}$

Solve for the variable. Write your answer in the simplest radical form or as a whole number. NO decimals!

20. $x^2 = 80$

21. $x^2 = 200$

Simplify the expressions. Write your answer in the simplest radical form or as a whole number. NO decimals!

22. $6\sqrt{3} + 2\sqrt{3}$

23. $\sqrt{20} + \sqrt{5}$

24. $\left(2\sqrt{5}\right)^2$

25. $\sqrt{2}\left(5 + \sqrt{18}\right) - 6\left(2 - 3\sqrt{2}\right)$

IV. Do you remember how to find the slope of a line?
For Help: https://www.youtube.com/watch?v=e_8z9yb7dtc

To Use the Following:	You Need:	Formula or Form
Slope Formula	Coordinates or Graph of Two Points	$m=\frac{y_2-y_1}{x_2-x_1}$ or $m=\frac{\text{rise}}{\text{run}}$

Use the two points to find the slope of the line.

26. $(2,6)$ and $(-3,2)$

27. $(3,-5)$ and $(3,4)$

28. $(7,-4)$ and $(5,0)$

Given the equation, find the slope of the line.

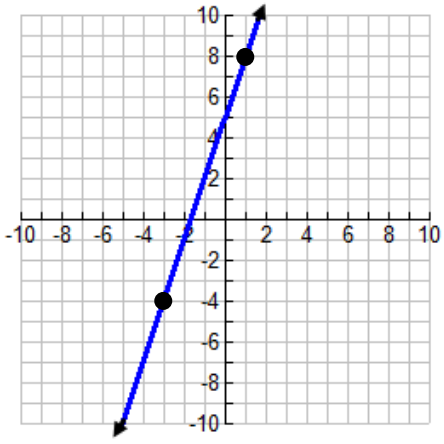
29. $y=\frac{2}{3}x-7$

30. $3x-5y=15$

31. $x=4$

Given the graph, find the slope of the line.

32.



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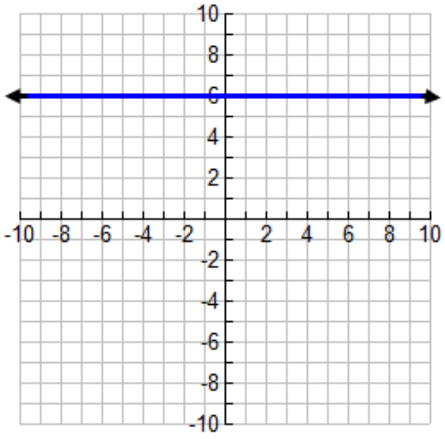

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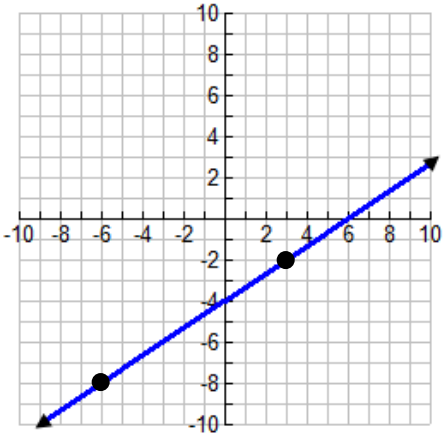


V. Do you remember how to write a linear equation?

For Help: https://www.youtube.com/watch?v=gvwKv6F69F0

To Use the Following:	You Need:	Formula or Form
Slope-Intercept Form	The y-intercept and the slope	$y = mx + b$ ***m*** is the slope and ***b*** is the y-intercept
Point – Slope Form	Coordinates of any point on the line and the slope.	$y - y_1 = m(x - x_1)$ (x_1, y_1) are the coordinates of the point

Write the equation of the line in the requested form.

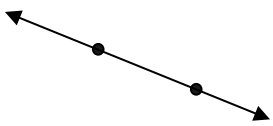
35. Write the equation of a line with a slope of $\frac{5}{2}$ and a y-intercept of -2 in slope-intercept form.

36. Write the equation of a line that passes through (5, -1) with a slope $-\frac{2}{3}$ in point-slope form.

37. Write the equation of the line that passes through the points *M* (1, 2) and *N* (5, 4) in point-slope form. (Hint: find the slope of the line first)

38. Write the equation of a line with an x-intercept of (4, 0) and a y-intercept of (0, 6) in slope-intercept form. (Hint: find the slope of the line first)

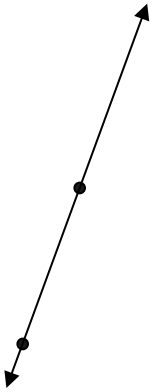
39. Write the equation of the line in slope-intercept form.



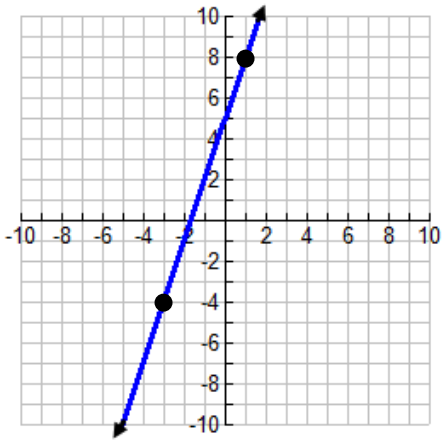
40. Write the equation of the line.

Write the equation of the line in the requested form.

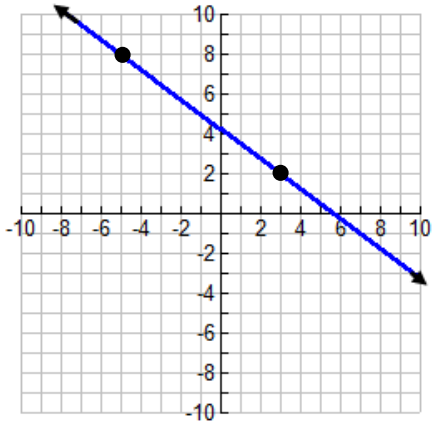
41. Write the equation of the line in slope-intercept form.



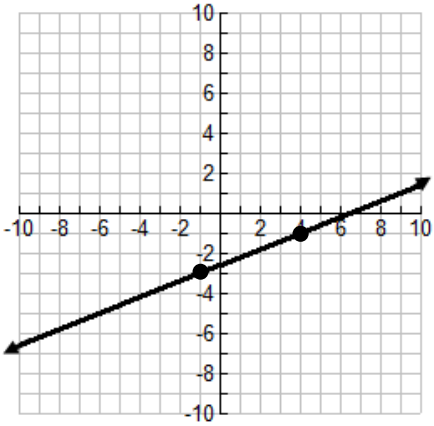
42. Write the equation of the line in point-slope form.



43. Write the equation of the line in point-slope form.



44. Write the equation of the line in point-slope form.



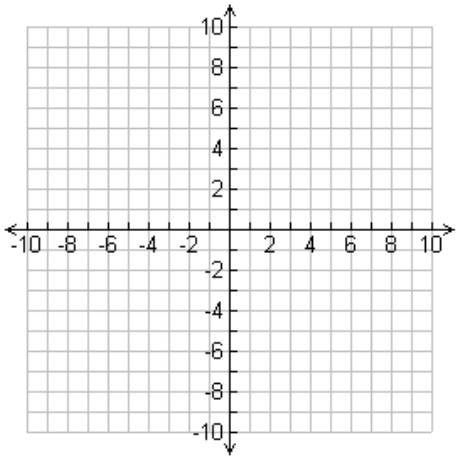
VI. Do you remember how graph a line?

For Help: https://www.youtube.com/watch?v=dpu07WV0RAY

Graph each equation after naming the slope and the y-intercept.

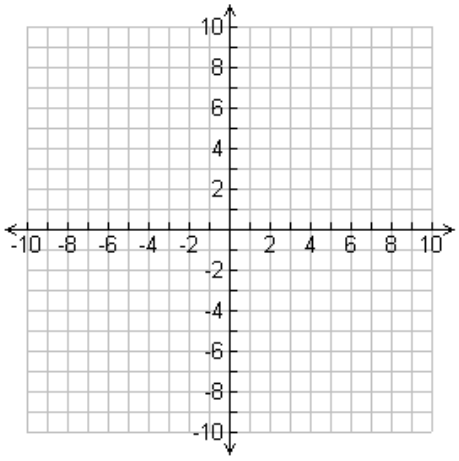
45. $y = 3x + 2$

Slope = _____ y-int = _____



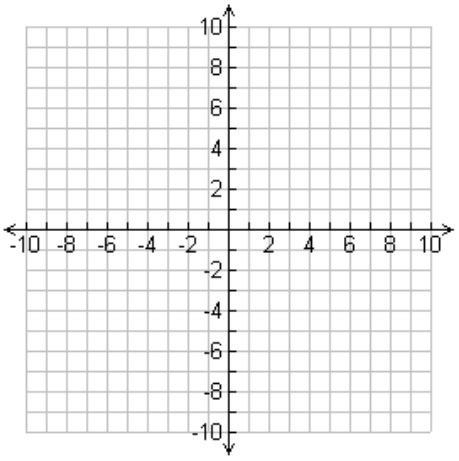
46. $y = -4$

Slope = _____ y-int = _____



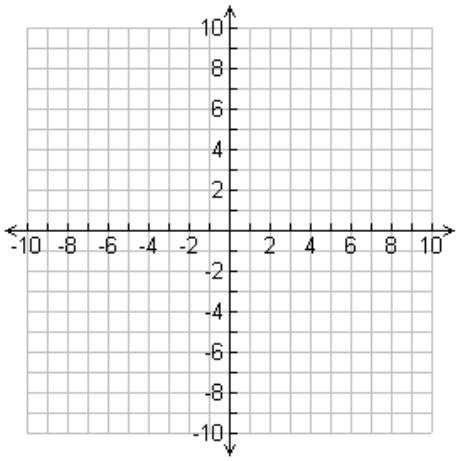
47. $y = -\frac{2}{3}x - 3$

Slope = _____ y-int = _____



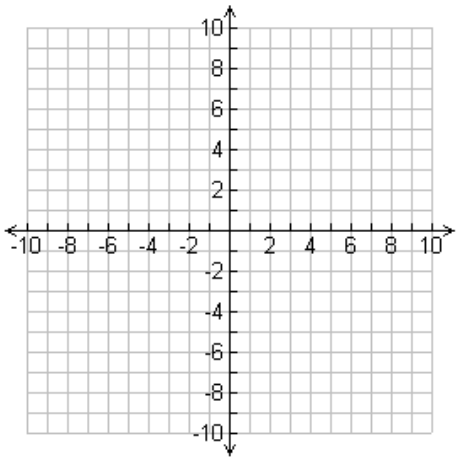
48. $3x + y = 4$

Slope = _____ y-int = _____



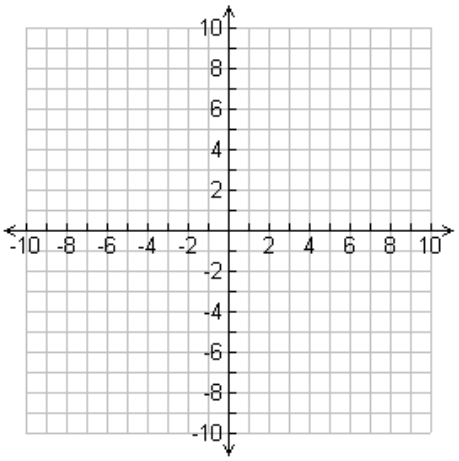
49. $y - 2 = -\frac{1}{2}(x + 2)$

Slope = _____ y-int = _____



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

Slope = _____ y-int = _____



VII. Do you remember how to solve systems of linear equations?

For Help: https://www.youtube.com/watch?v=HL2fDIOMLJ0
For Help: https://www.youtube.com/watch?v=V7H1oUHXPkg

Solve by most efficient method (substitution or elimination). State all answers as an ordered pair

51. $\begin{cases} 2x-3y=20 \\ 6x-y=20 \end{cases}$

52. $\begin{cases} 2x+3y=6 \\ x=3-y \end{cases}$