

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 Geometry. You can use some time over the summer to complete the following problems. There will be a short quiz that covers the information from this packet *after* the first week of school.

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. $(x-3)+17=30$	10. $16 = \frac{3}{4}x + 1$
11. $-7x = -12x - 65$	12. $\frac{1}{2}(x-16) = 7$
13. $5x + 5(1-x) = x + 8$	14. $-(4x-8) = 2(x+4)$
15. $\frac{x}{3} = \frac{40}{12}$	8) 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. $\sqrt{121}$

19. $5\sqrt{12}$

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

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

21. $x^2 = 80$

22. $x^2 = 200$

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

23. $(2\sqrt{5})^2$

24. $6\sqrt{3} + 2\sqrt{3}$

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

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.

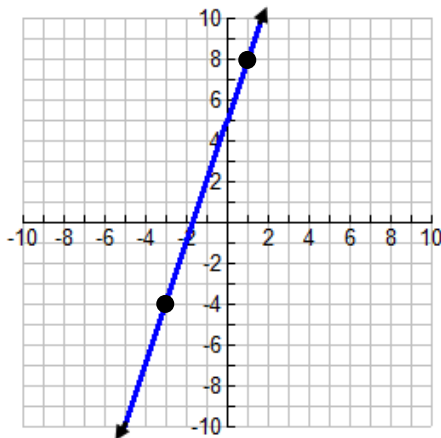
29. $y = \frac{2}{3}x - 7$

30. $3x - 5y = 15$

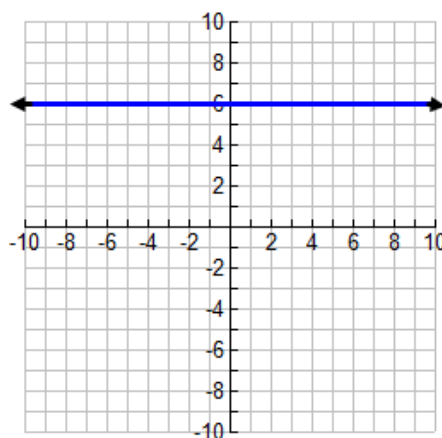
31. $x = 4$

Given the graph, find the slope of the line.

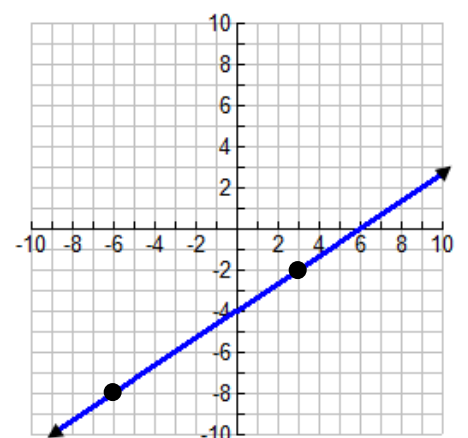
32.



33.



34.

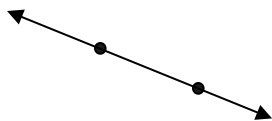



V. Do you remember how to write a linear equation?

For Help: <https://www.youtube.com/watch?v=qvwKv6F69F0>

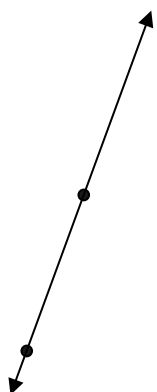
To Use the Following:	You Need:	Formula or Form
Slope-Intercept Form	The y-intercept and the slope	$y = mx + b$ <i>m</i> is the slope and <i>b</i> is the y-intercept
Point – Slope Form	Coordinates of any point on the line and the slope.	$y - y_1 = m(x - x_1)$ (x_1, y_1) are the coordinates of the point

Write the equation of the line in the requested form.

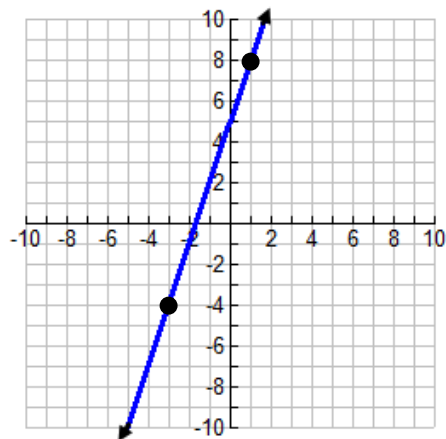
35. Write the equation of a line with a slope of $\frac{5}{2}$ and a y-intercept of -2 in slope-intercept form.	36. Write the equation of a line that passes through (5, -1) with a slope $-\frac{2}{3}$ in point-slope form.
37. Write the equation of the line that passes through the points <i>M</i> (1, 2) and <i>N</i> (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.

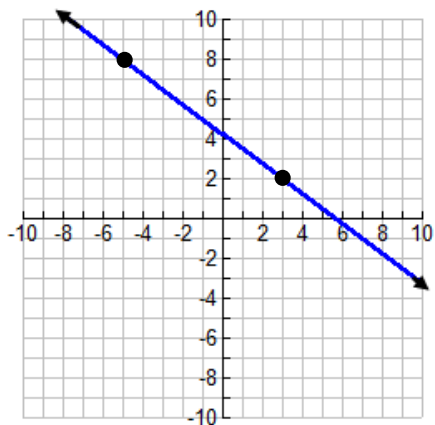
41. Write the equation of the line in slope-intercept form.



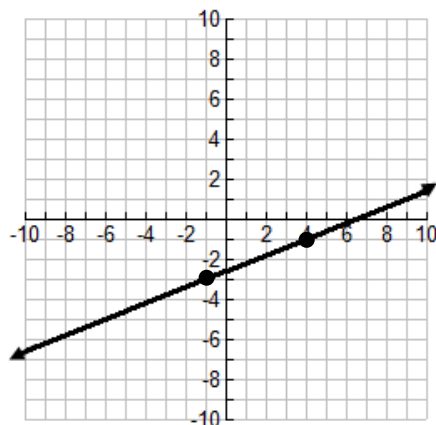
42. Write the equation of the line in point-slope form.



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. $y = 3x + 2$

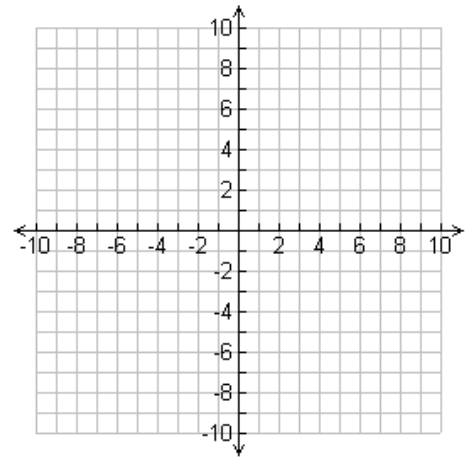
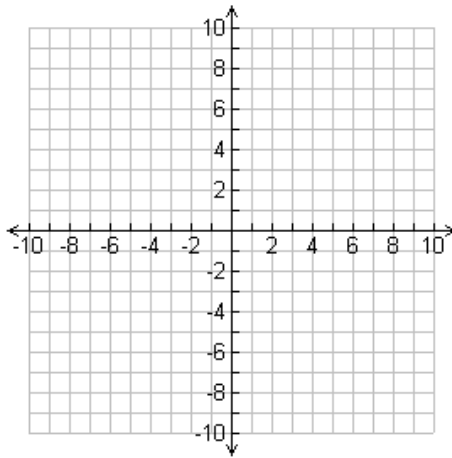
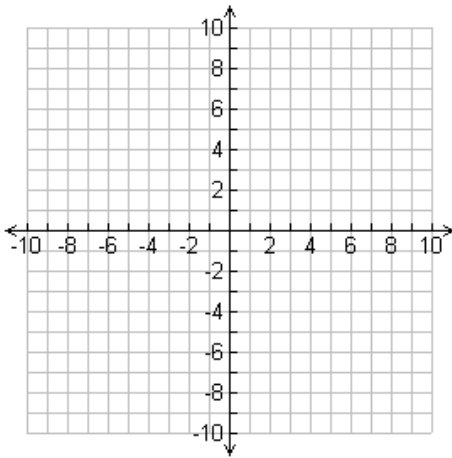
46. $y = -4$

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

Slope = _____ y-int = _____

Slope = _____ y-int = _____

Slope = _____ y-int = _____



48. $y + 4 = 2(x + 3)$

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

50. $3x + y = 4$

Slope = _____ y-int = _____

Slope = _____ y-int = _____

Slope = _____ y-int = _____

