

Name: _____

Algebra 1 Teacher: _____

School: _____

Geometry Summer Review Packet 2026

Purpose:

This packet is designed to help you review and reinforce important math concepts and skills from Algebra 1. Completing this packet over the summer will prepare you for the academic challenges of Geometry and give you a strong head start for the school year.

Teachers may also use this packet to help form appropriate intervention groups, ensuring that all students begin Geometry with a strong and consistent foundation.

Instructions:

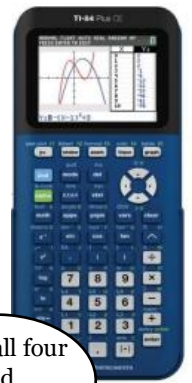
- Complete **all sections** of this packet.
- This packet is **due on the first day of the second week of school** on August 31, 2026.
- **Show all your work** for each problem — this demonstrates your understanding.
- **Circle your final answers.**
- It's okay if you need help with some questions — Try all problems to the best of your ability.
- Your packet will be graded **based on effort**, so make sure to attempt each question and show your thinking.
- You may **use a calculator** on this packet.

This assignment will be beneficial to you if you try your best and show what you truly know. Our goal is to make sure every student gets the best possible education and knowing what you already understand helps us support you better.

The NHS Main Office can provide printed packets as needed.

PLEASE USE THE FOLLOWING RESOURCE IF YOU NEED HELP
(link below or QR code to the right)

<https://www.khanacademy.org/math/get-ready-for-geometry>



A graphing calculator is used through all four years of high school. The recommended graphing calculator is the TI-84 Plus CE or the new TI-84 EVO.

If you are unable to purchase a graphing calculator, NHS has a limited number available to loan for the school year.



Assistance with #1-4
<https://bit.ly/4bte8dw>



Assistance with #5-8
<https://bit.ly/3UQofSD>



Solve each equation for this missing variable. Show all work.

1. $-x - 9 = x + 3$

2. $7x - 4 + 2x = 12 + 7x$

3. $-5 - 4(n + 3) = -19 - 3n$

4. $-3(3 - k) = 3(k + 3)$

5. $\frac{3}{4}(d - 3) = 6$

6. $\frac{6}{w} = -24$

7. $\frac{1}{2}(6 + 4x) - \frac{1}{4}(8x - 12) = \frac{1}{2}(2x - 4)$

8. $24 = \frac{5}{8}x + 4$



Solve the following proportions algebraically.

9. $\frac{y}{50} = \frac{3}{100}$

10. $\frac{14}{n+30} = \frac{2}{n}$

11. $\frac{p+15}{42} = \frac{p+5}{14}$

12. $\frac{r}{3r+1} = \frac{2}{3}$

13. $\frac{8}{9} = \frac{30+a}{45}$

14. You made a model of the Space Needle in Seattle, Washington, for a report on architecture in the United States. You used a scale of 1in:50ft. Your model is 12.1 inches tall. Estimate the actual height of the Space Needle.



Solve the Literal Equations for the indicated variable.

15. $d = rt$ for r

16. $ax + by + c = 0$ for y

17. $A = \frac{e+f}{2}$ for e

18. $6x + 2y = 10$ for y

19. $a^2 + b^2 = c^2$ for b

20. $V = \pi r^2 h$ for h

Assistance with #21-22
<https://bit.ly/3UZOG8O>

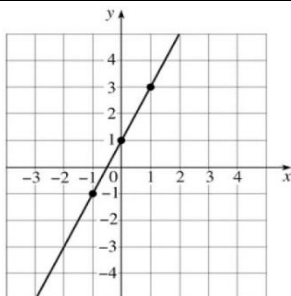
Assistance with #23-24
<https://bit.ly/4atqCRb>

Assistance with #27-28
<https://bit.ly/3ynjrfZ>

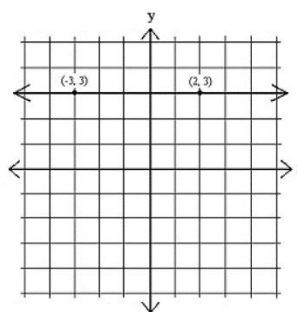


Find the slope of the line with the given information for 21 – 28:

21.



22.



23. Find the slope of the line that contains the points: $(3, 4)$ and $(-5, 0)$

24. For a line with a slope of $m = \frac{3}{4}$ containing two points $(7, 5)$ and $(x, 2)$, find the value of x .

25. $y = x + 4$

26. $y = -\frac{3}{2}x + 4$

27. $5x + 4y = 40$

28. $7x + 42 = 2y$

Assistance with #29-32

<https://bit.ly/4avhoUr>



Write the equation that describes each line in slope-intercept form.

29. $m = 3$ and passes through point $(-1, 2)$

30. $(-2, 4)$ and $(1, 2)$

31. Passes through point $(-5, -5)$ and is parallel to $6x - y = 1$

32. $m = -\frac{1}{2}$; $(8, -1)$ is on the line

Assistance with #33-36

<https://bit.ly/3WSK7zl>



Determine the slopes of lines that would be parallel and perpendicular to each equation.

33. $y = \frac{2}{3}x + 3$

Parallel Slope=

Perpendicular Slope=

34. $3x + 4y = 8$

Parallel Slope=

Perpendicular Slope=

35. $7x + 3y = 14$

Parallel Slope=

Perpendicular Slope=

36. $\frac{x}{3} - y = 3$

Parallel Slope=

Perpendicular Slope=

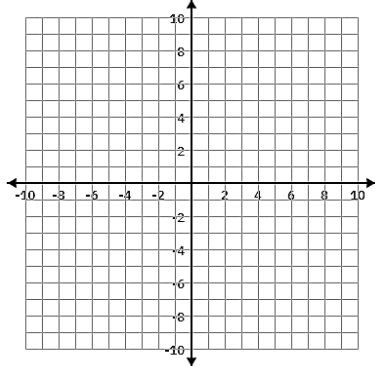
Assistance with #37-40

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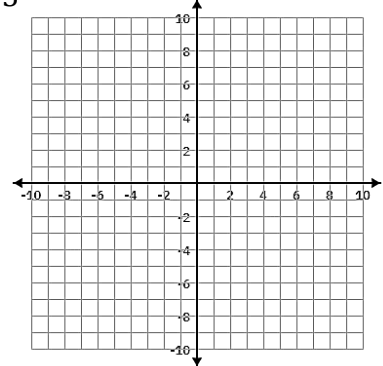


Graph the line described by each equation.

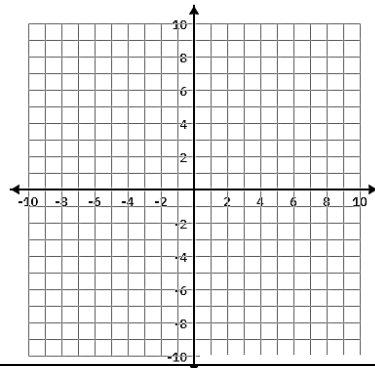
37. $y = -x + 3$



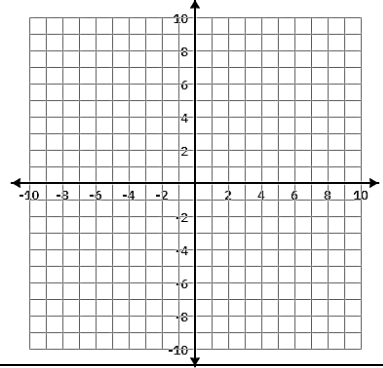
38. $y = \frac{5}{2}x - 5$



39. $y = 6$



40. $x = -4$



Parallel and Perpendicular Lines.

Assistance with 41-42

<https://bit.ly/4bPIW9i>



41. Determine which of the following, if any, are parallel or perpendicular.

Line a : $y = 8x - 5$

Line b : $y = \frac{1}{8}x + 1$

Line c : $8x + y = 2$

42. Write the equations of the lines that pass through the given point and that are parallel and perpendicular to the given line.
 $(-5, -5), \quad 6x - y = 1$

Assistance with #43-44
<https://bit.ly/44PEVyl>



Assistance with #45-46
<https://bit.ly/3yvDOI0>



Solve each system of equations.	
43. $\begin{cases} y = 2x + 3 \\ y = -x + 9 \end{cases}$	44. $\begin{cases} y = -3x + 4 \\ y = 2x + 4 \end{cases}$
45. $\begin{cases} -2x + 2y = 4 \\ 4x + 3y = -15 \end{cases}$	46. $\begin{cases} 9x + 6y = 12 \\ -18x - 8y = -4 \end{cases}$

Assistance with #47-50

<https://bit.ly/3UV6vFI>



Add or subtract the following polynomials

47. $(12x^2 + 2x + 3y) + (11y^2 - 4y + 3x)$

48. $(-8k^2 + 5) - (3k^2 + 7k - 6)$

49. $(2x + 3xy + 4y) + (6x - 7xy + 10)$

50. $(4xy^2 - 2x) - (5x^2y - 2x)$

Assistance with #51-54

<https://bit.ly/4bLcaVM>



Multiply the polynomials:

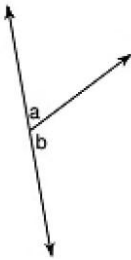
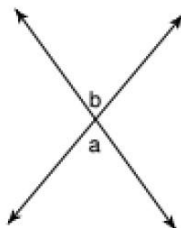
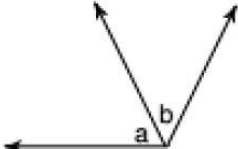
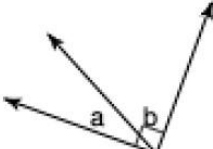
51. $-4x(x^2 - 5x + 7)$

52. $(y - 7)(y - 4)$

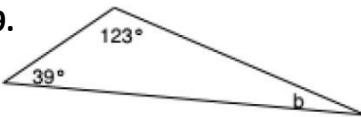
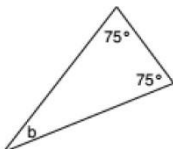
53. $(x - 4)^2$

54. $(5x + 2)^2$

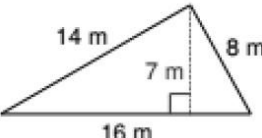


Name the relationship(s): complementary, supplementary, vertical, or adjacent.	
55. 	56. 
57. 	58. 



Find the measure of angle b .	
59. 	60. 



Find the perimeter of each figure.	
61. 	62. 

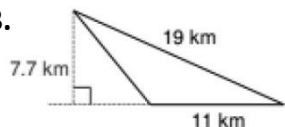
Assistance with #63-68

<https://bit.ly/44W8ZIF>

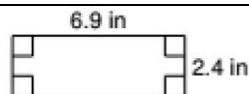


Find the area of each figure.

63.



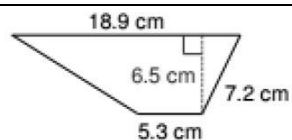
64.



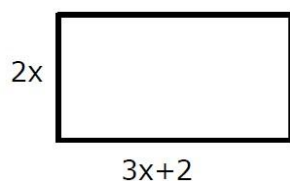
65.



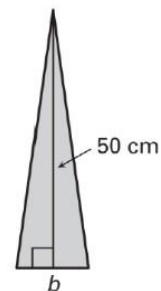
66.



67. Write an **expression** to represent the perimeter and area of the following rectangle.



68. Use the information about the figure to find the indicated measure. $A = 345 \text{ cm}^2$, find the base " b ".



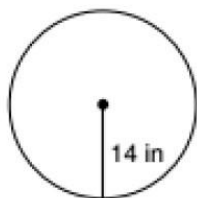
Assistance with #69-70

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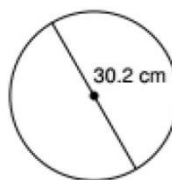


Find the area and circumference of each circle.

69.



70.



Assistance with #71-72

<https://bit.ly/4e02QPG>

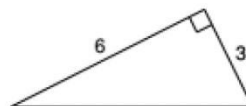


Use the Pythagorean Theorem to find the missing length.

71.



72.



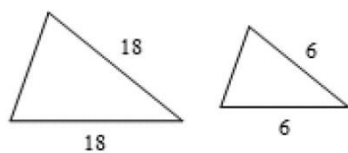
Assistance with #73-74

<https://bit.ly/3R0bWSA>

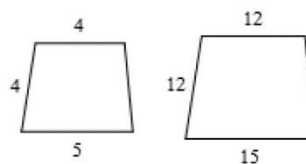


The polygons in each pair are similar. Find the scale factor of the smaller figure to the larger figure. Then find the missing side length.

73.



74.



For students going into **Honors Geometry only** please complete 75-80.

Assistance with #75-80

<https://bit.ly/3WSpyDI>



Factor each polynomial.

75. $x^2 + 5x + 6$

76. $x^2 + x - 12$

77. $x^2 + 11x + 28$

78. $x^2 - 8x + 12$

79. $x^2 + 2x - 80$

80. $x^2 - 19x - 20$



After completing this packet, please reflect on how you felt about the material.

- 1) Was there a topic that you felt the most comfortable with?
- 2) Was there a topic where you struggled most?
- 3) Are there specific questions you have for your teacher?
- 4) Were there any topics that did not look familiar from middle school and/or Algebra 1?