

Math Summer Work for Students entering Honors Geometry

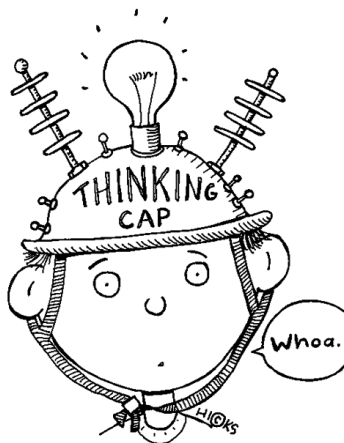
Complete the problems in this packet.

- **SHOW ALL WORK**
- You will also be assessed on the material in the packet so be sure that you have reviewed the material.
- This is a review of various topics from Algebra I that are important to your success in Honors Geometry.

Khan Academy is a great tutorial website that may assist you if you get stuck. You can use it for video tutorials or additional practice.

www.khanacademy.org

In Khan Academy, click on “Learn”, and then “Knowledge Map”. Type topics into the text box to find them.



Have a great summer and see you in August!

Solve each equation. Check your answer.

1. $-67 = -8n + 5$

2. $2x + 23 = 49$

3. $-6 - 3(2x + 4) = 18$

4. $5(t - 3) - 2t = -30$

5. $3x - 5 = 2(-x - 5)$

6. $3x - 3(4 + x) = \frac{3}{4}(3x + 2) - 1$

Solve each proportion.

7. $\frac{5x+3}{2x-1} = \frac{3}{4}$

8. $\frac{-3x+4}{6} = \frac{-5x-7}{5}$

Use a proportion to solve.

9. You are riding your bicycle. It takes you 28 min to go 8 mi. If you continue traveling at the same rate, how long will it take you to go 15 mi?

10. A blueprint is 1 in : 12 ft. The width of a building is 48 ft. What is the width of the building on the blueprint?

Write an equation to model each situation. Then solve.

11. The perimeter of a pool table is 30 ft. The table is twice as long as it is wide. What are the dimensions of the pool table?

12. The length of a rectangle is 4 in. greater than the width. The perimeter of the rectangle is 24 in. Find the dimensions of the rectangle.

Simplify

13. $(2x^2 + 3 - x) - (2 + 2x^2 - 5x)$

14. $(x^3 + 3x) - (x^2 + 6 - 4x)$

15. $(3 + 5x^3 + 2x) - (x + 2x^2 + 4x^3)$

16. $(2x + 3) - (x - 4) + (x + 2)$

17. $(3x + 5)(5x - 7)$

18. $(4x - 7)(2x - 5)$

19. $(x - 5)(2x^2 - 7x - 2)$

20. $(y^2 - 4w^2)^2$

21. $(4a - 3y)^2$

22. $(3y + 2a)(3y - 2a)$

Write an equation in slope–intercept form for the line through the given points, or through the given point with the given slope.

23. $(-5, 13)$ and $(-10, 9)$

24. $(-2, 3)$ and $m = -1$

25. $(1, 2)$ and m undefined

26. $(7, 5)$ and $m = 0$

Find the slope of a line parallel to the graph of each equation.

27. $y = x + 1$

28. $6x + 2y = 4$

29. $x = -4$

30. $y - 3 = 0$

Find the slope of a line that is perpendicular to the given equation.

31. $y = 3x - 2$

32. $y = -5x + 9$

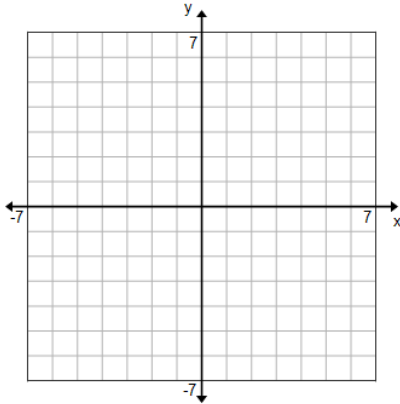
Determine which sides, if any, of the figures are parallel, perpendicular, or neither.

33. Rectangle $BACD$ has coordinates $B(-4, -3)$, $A(-1, -7)$, $C(3, -4)$, and $D(0, 0)$.

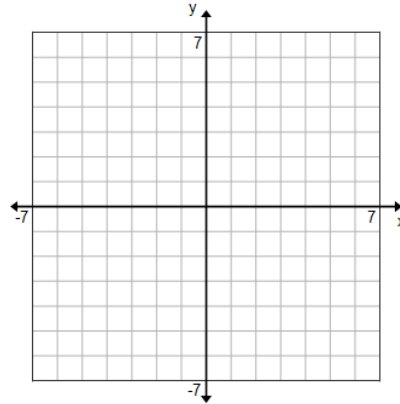
34. Triangle QRC has coordinates $Q(3, 6)$, $R(3, -2)$, and $C(-3, -2)$.

Graph each figure from Exercise 33 and 34 on the coordinate planes. Find the perimeter and area of each figure.

35.



36.



Answer the questions to the following scenario.

37. You want to frame a picture that is 5 in. by 7 in. with a 2.5 in.-wide frame.

a. What is the perimeter of the picture? What is the perimeter of the outside edge of the frame?

b. What is the area of the picture? What is the area of the frame?

Solve each system using substitution. Each may have a unique solution, no solution, or infinite solutions. Show your work.

38. $-3x + 2y = -6$
 $-2x + y = 6$

39. $4x = 6y + 24$
 $2x - 3y = 12$

Solve by elimination. Show your work.

40. $-6x - 8y = -28$
 $9x + 5y = -14$

41. $3x + 8y = 81$
 $5x - 6y = -39$

Use a system of linear equations to solve:

42. Your teacher is giving you a test worth 100 points containing 40 questions. There are two-point and four-point questions on the test. How many of each type of question are on the test?

Solve each system of equations. (Use either process you used in Exercises 38-41)

43. $-\frac{1}{10}x + \frac{1}{2}y = \frac{4}{5}$
 $\frac{1}{7}x + \frac{1}{3}y = -\frac{2}{21}$

44. $-5 + \frac{1}{2}y = \frac{3}{8}x$
 $\frac{1}{4}x + \frac{3}{2}y = 4$