

The Beginners Guide to Geometry Honors

A Note To Our Students: WELCOME! This packet is designed to help you make the transition into this challenging course as smooth as possible. The content of this suggested practice is material that we feel you should have learned and mastered in Algebra.

Our suggestion: First look through the whole packet and read all the directions. Begin with the problems that you recognize and are confident with.

For the concepts you are unfamiliar with: Impress us!! Show us your resourcefulness and see what you can find. Perhaps try an Algebra I or II book, a math website, a classmate, relative, or anyone you know.

One thing is for sure: The more you do now, the easier it will be when school starts and the more comfortable you will feel with the pace of the class.

Instructions: Feel free to use a calculator to check a solution or two, but ALL problems are designed to be done without one. NEATLY show all your work for each problem. You are encouraged to try every problem. For each word problem we'd like you to come up with an equation or equations to solve it. This is not a mandatory assignment (points will not be given), but it is designed to help maximize your success at the beginning of the school year. BRING THE PACKET ON THE FIRST DAY OF CLASS. We will spend time in class during the first week of school answering questions you may have over the material. Some of these types of questions will be on the first quiz. Give us your best work...while giving yourself the opportunity to get off to a great start.

WE LOOK FORWARD TO MEETING YOU IN AUGUST!!!

~THE GEOMETRY HONORS TEACHERS~

Algebra Review

Write an algebraic expression to represent each verbal expression.

- 1.) Fourteen decreased by the square of a number _____
- 2.) Twice the sum of a number and 11 _____
- 3.) The product of the square of a number and five _____
- 4.) The square of the sum of a number and 13 _____

Define a variable and write an inequality for each problem. Then solve the inequality.

- 5.) The product of 11 and a number is less than 53. _____
- 6.) Three fourths of a number decreased by 25 is at least 8. _____
- 7.) The opposite of five times a number is less than 321. _____
- 8.) Ninety decreased by 5 is greater than or equal to the product of a number and 10.

Word Problems—Solve the following word problems by setting up an equation.

Hint—you might have to use the quadratic formula or solve by factoring- draw diagrams if needed.

- 9.) A picture has a height that is $\frac{4}{3}$ its width. It has an area of 192 square inches. What are the pictures dimensions?

- 10.) The product of two consecutive negative integers is 1122. What are the numbers?

- 11.) The length of a tropical garden at a local conservatory is 5 feet more than its width. A walkway 2 feet wide surrounds the outside of the garden. If the total area of the walkway and garden is 594 square feet, find the dimensions of the garden.(draw a diagram)

Don't forget you're supposed to be writing equations to solve these word problems!

12.) Find two integers whose sum is 15 and whose product is 54.

13.) The width of a rectangle is 5 less than its length. The perimeter of the rectangle is 68. Find the length of the rectangle.

14.) The length of a rectangle is 2 less than 3 times its width. If the area measures 65 square meters find the dimensions of the rectangle.

Solve the following systems of equations. Leave exact answers please. Show all work.

15. $y = x + 3$ _____
 $5x + y = 9$

16. $14x + 2y = 34$ _____
 $x - 5y = 5$

17. $4x + 3y = -6$ _____
 $5x - 6y = -27$

18. $4x + 4y = 0$ _____
 $-x - 2y = 4$

19. $8x + 6y = 180$ _____
 $4x + 15y = 180$

20. $y + 15 + 39 - x = 90$ _____
 $x + y + y + 15 = 180$

21. Your school sold 456 tickets for the high school play. An adult ticket costs \$3.50 and a student costs \$1.00. The total ticket sales was \$1131. How many adult tickets and how many student tickets did they sell? Set up a system to solve.

Factor to solve the following equations. Show all work and method of factoring and place solutions on the line.

22. $y^2 - 15y - 54 = 0$ _____

23. $x^2 + 12x = -32$ _____

24. $k^2 + 28 = 16k$ _____

25. $c^2 - 11c - 60 = 0$ _____

26. $3x^2 + 10x - 8 = 0$ _____

27. $6x^2 - 7x = 3$ _____

28. $5x^2 + 16x + 3 = 0$ _____

29. $3x^2 - 15x = 42$ _____

30. $20x^2 + 80x + 35 = 0$ _____

31. $49d^2 + 28d + 4 = 0$ _____

32. $25n^2 - 64 = 0$ _____

33. $4x^2 = 16$ _____

Simplify and/or rationalize the following radicals. Show work. Leave exact answers. No decimals. No radicals in denominator.

34. $\sqrt{98}$ _____

35. $-2\sqrt{150}$ _____

36. $(\sqrt{21})(\sqrt{6})$ _____

37. $\sqrt{20} - \sqrt{80}$ _____

38. $\sqrt{\frac{1}{5}} + \sqrt{80}$ _____

39. $\frac{12}{\sqrt{3}}$ _____