HONORS GEOMETRY SUMMER PACKET

This packet is **MANDATORY** and must be completed thoroughly. Students will be assessed on the content in the packet and any additional skills that are reviewed in class within the first week of school.

This packet should help you prepare for Honors Geometry at Norwalk High School. Please complete these problems as they are due the first day of school.

Simplify each expression:

1. $3x^2 + xy - 6y^2$ when x = -—4 and $y = \frac{1}{2}$

2. $[2^3 + 4(7 - 3)] \div 8$

3. $3|6 - 12|$

4. $\frac{(-5)(-2) - 4}{-4\left(\frac{1}{3}\right)}$

5. $\frac{-(-5) \pm \sqrt{5^2 \ -4(1) \ (-6)}}{2(1)}$

6. $\dfrac{\frac{4}{5}}{2-\frac{1}{3}}$

7. $2(7g-4h)-6(5h-3g)$

8. $(2y-3)(y+7)$

9. $6x^2(3x^3-4x+4)$

10. $(-3x^3y^2)^3$

11. $(3x+5)(2x-4)$

12. $(2x-5)^2$

13. $(-x^2y)^3(2x^3y^2)^2$

14. $\dfrac{14x^2+42x-7}{7}$

Solve for the variable.

15. $75=3(-6n-5)$

16. $-4x+2(5x-6)=-3x-39$

17. $-16+5n=-\dfrac{1}{2}(-6+8n)+3$

18. $12(2k+11)=12(2k+12)$

19. $4(-x-6)+3=-2(2x+14)+7$

20. $5(3z-7)=4(2z+7)$

21. $5-3(2n-3)=44$

22. $\frac{1}{3}(2x-4)+5=-\frac{2}{3}(x+1)$

23. $\frac{5}{x}=\frac{3}{2}$

24. $\frac{-4}{2r-9}=\frac{-16}{3r+14}$

25. $\frac{x}{x+5}=\frac{x-4}{x}$

26. $\frac{x-3}{x}=\frac{9}{10}$

27. $\frac{5x}{x-3}=\frac{4}{3}$

28. $5-3x<29$

29. $V = \frac{4}{3}\pi r^3$ for r

30. $2x - \frac{4}{3}y = 8$ for y

31. $\frac{4}{7}(M + 12) = D$ for M

Solve each system of equations.

32. $$\begin{aligned} y &= x - 3 \\ x + y &= 13 \end{aligned}$$

33. $$\begin{aligned} 4(e + f) &= 8(f - 4) \\ 2(e - 1) &= f - 15 \end{aligned}$$

34. $$\begin{aligned} 2x - 3y &= -1 \\ y &= x - 1 \end{aligned}$$

35. $$\begin{aligned} -7x - 2y &= -13 \\ x - 2y &= 11 \end{aligned}$$

In the section (# 38 -44) where you are asked to solve by factoring, try to find the information on google. There are many good math web sites on how to factor quadratics - simply type in factoring quadratic equations with lead coefficient of one (purplemath is one site) and this will lead to other examples of where the lead coefficient is not one.

I will check my mail during the summer if you have any questions.

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Enjoy your summer see you in September

Ms. Wax

36. $\begin{aligned} 2x-8y&=6 \\ -5x-20y&=-15 \end{aligned}$

37. $\begin{aligned} 3+2x-y&=0 \\ -3-7y&=10x \end{aligned}$

Solve each quadratic by factoring.

38. $y^2-9=0$

39. $w^2+3w=10$

40. $3v^2=v+10$

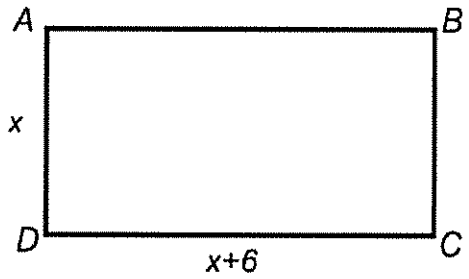
41. $x^2-15x=-50$

42. $3p^2-2p-5=0$

43. $2x^2+11x+5=0$

44. $7x^2 + 53x + 28 = 0$

Use rectangle *ABCD* to answer examples 42-46.



45. Write the equation that shows the perimeter of the rectangle is 48 inches.

46. Solve for *x*.

47. Find the area of the rectangle.

48. Based on the figure above, write the equation that shows the area of the rectangle is 72 square inches.

49. Find the dimensions of the rectangle based on your findings in #48.

In examples #50 and 51, solve using one variable.

50. The sum of two numbers is 16. The greater of the two numbers is one more than four times the lesser number.

51. The width of a certain rectangle is 2 meters greater than half the length. Four times its length is 26 meters greater than its perimeter. What are the dimensions of the rectangle?

In examples #52 and 53, write a system of two equations with two variables and solve each problem.

52. The difference between three times one number and a lesser one is 37. The sum of the greater number and twice the lesser number is 38. Find the numbers.

53. The length of a rectangular garden is three times the width. If the perimeter is 32 meters, what are the dimensions of the garden?

54. Use the distance formula $\sqrt{(x_1-x_2)^2+(y_1-y_2)^2}$ to find the **exact** length of *AB* given $A(2,6)$ and $B(-2,4)$.

55. Find the midpoint of the segment *AB* given $A(2,6)$ and $B(-2,4)$.

$$M=\left(\frac{(x_1+x_2)}{2},\frac{(y_1+y_2)}{2}\right)$$