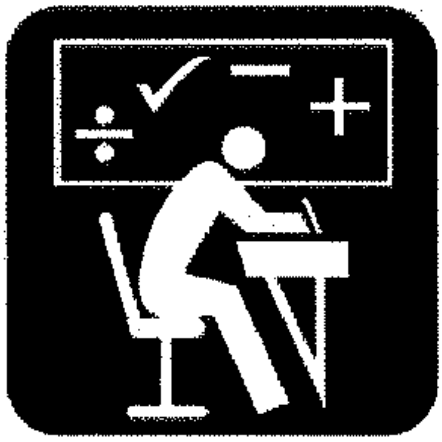
CARTERET HIGH SCHOOL
MATH DEPARTMENT
Honors Algebra II
SUMMER PROJECT 2018



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Honors Algebra II SUMMER PACKET

Copy and complete all steps of each problem in a well-organized notebook and draw graphs on grid paper. Be neat and attempt all problems. You should be able to do every problem **without a calculator** (except graphing problems where you might use calculator to create table of values or might want to use the calculator to check your work). You would be **tested on these concepts** sometimes during the first week of class.

For # 1 – 4, state the property illustrated.

1. $(a+b)c=(b+a)c$

2. $5+(-5)=0$

3. $14\times 1=14$

4. $-5\left(x-y^2\right)=-5x+5y^2$

5. Find the error in the following "proof" that 1 = 0.

Suppose $a = b$. Then,

$$a-b+b=b$$

$$\frac{a-b+b}{a-b}=\frac{b}{a-b}$$

$$\frac{a-b}{a-b}+\frac{b}{a-b}=\frac{b}{a-b}$$

$$1+\frac{b}{a-b}=\frac{b}{a-b}$$

Now, subtract $\frac{b}{a-b}$ from both sides and get 1 = 0.

For # 6 – 8, evaluate each expression.

6. $60-18\div 3\times 2$

7. $26-2(4-13)^2\div 6$

8. $13+\left[8+5(11-5)^2\right]$

9. Evaluate $4m(3m-2)$ when $m=-3.3$.

10. Evaluate $(7+5y)\div 3x$ when $x=\frac{1}{6}$ and $y=3$.

11. Evaluate $-3y + x^2 + 30$ given that $x = -3$ and $y = 9$.

12. Evaluate $3x \div 3x + \dfrac{4y}{4y}$ when $x = \frac{1}{2}$ and $x = -\frac{4}{3}$.

13. Evaluate $\dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ when $a = 4$, $b = -3$, and $c = -1$.

For # 14 – 17, solve for the variable.

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

15. $5\left(2 - \dfrac{1}{2}y\right) = 4 - \left(\dfrac{1}{4}y - 1\right)$

16. $\dfrac{6}{m-9} = \dfrac{8}{m+5}$

17. $\dfrac{n-7}{3n+8} = \dfrac{3}{5}$

18. Solve for A. $B = \dfrac{5}{7}(A-11)$

19. Solve for P. $A = P + Prt$

20. Solve for v_i. $a = \dfrac{v_f - v_i}{\Delta t}$

21. Solve for R_1. $\dfrac{1}{R_{\text{eq}}} = \dfrac{1}{R_1} + \dfrac{1}{R_2}$

For # 22 – 25, solve for the variable.

22. $|34 + 5x| = 20$

23. $3|8 + y| - 16 = 9$

24. $|3m + 10| = m + 6$

25. $2|n + 6| = 7n - 3$

For # 26 – 29, solve and graph the solution on the number line.

26. $2x + 5 \geq 2 - (x - 9)$

27. $\dfrac{5}{8}y - \dfrac{2}{3} \leq y - \dfrac{1}{4}$

28. $9(-2m+3)+3m>-2(-8+3m)$

29. $\dfrac{6n-2}{9n+5}\geq\dfrac{6}{13}$

For # 30 – 34, solve and graph the solution on the number line.

30. $9-2x>17$ and $5x+14\geq-21$

31. $5y+6\geq4(6-y)$ or $\dfrac{1}{3}y+3>\dfrac{1}{2}(y+7)$

32. $-5<35-4m\leq11$

33. $8-x\geq2(x-6)+5$ and $13x-6<3(3x+1)-1$

34. $4y+3>y-9$ or $5(y+2)-3>2(3y-7)$

For # 35 – 38, solve and graph the solution on the number line.

35. $|3-8x|<21$

36. $|8y+7|\leq-25$

37. $7-2\left|\dfrac{2}{3}m-4\right|<-13$

38. $19-5\left|11-\dfrac{3}{2}n\right|>-16$

39. The length of a rectangle is 6.3cm greater than its width. The perimeter of the rectangle is 66.2cm. Find the length of the rectangle.

40. The largest angle of a triangle is 60° larger than the smallest angle. The middle angle is triple the measure of the smallest angle. What is the measure of the smallest angle?