Algebra 2 Summer Packet

Dear Student,

Welcome to Sayreville War Memorial High School and your math course for the year! There is much to learn this year, and each class session during school will require students to work diligently, both during and outside of class. This summer Math packet addresses the material that you should be comfortable with before the start of **Algebra 2.** This Math packet serves 2 purposes:

1)   It will allow you to remain mathematically fresh during the summer and

2)   It will enable you to "hit the ground running" when this course begins.

This packet should be completed and brought with you on the first day of school. Use the answer key provided to check your work. If you come across questions that you are unsure of, make note and bring that up to your teacher during the review. It would be a mistake to complete this packet immediately upon the completion of this past school year as well as waiting until just before the next school year begins. Take some time off and look towards beginning the packet come mid-summer. It is important that the techniques practiced in this packet are fresh in your mind come the first day of school.

You will be assessed on this content within the first week or so of school.

Good luck!

Name:_____.

Name: _____

Algebra 2- Summer Assignment

Please show all work on a separate piece of paper to receive full credit. Read all directions before completing each section.

Order of Operations-
For problems 1-4, find the value for each of the given expressions.

1. $6 - 9 \div 3$

1. _____

2. $(6 + 18) \bullet 2$

2. _____

3. $(-1) - 8 - 3 \bullet (-10)$

3. _____

4. $5 + 4^2 \div 2 - 3$

4. _____

5. Evaluate $\dfrac{5a - b^2}{3c}$ if $a = 3$, $b = -1$, and $c = 4$.
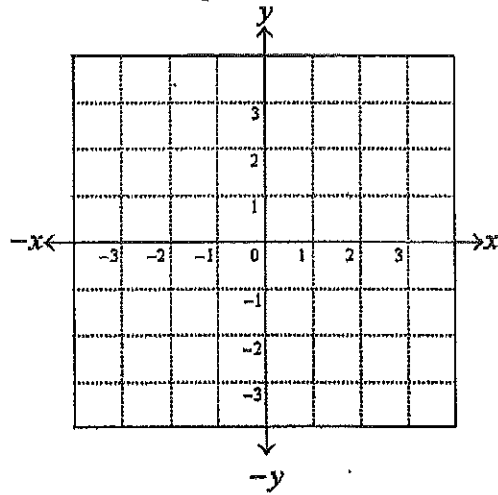
5. _____

Equations and Inequalities-
For problems 6-14, solve each equation or inequality for the given variable.

6. $x + 3 = 7$

6. _____

7. $7x - 10 = 5x + 16$

7. _____

8. $|x - 3| - 5 = -2$

8. _____

9. $8 - 3(y - 4) = 5y + 2(y - 6)$

9. _____

10. $\dfrac{m + 3}{8} = 2$

10. _____

11. $v^2 - 100 = 0$

11. _____

12. $10t - 24 < 6$

12. _____

13. $12x - 6 \geq 7x + 19$

13. _____

14. $-8 < 5x + 2 < 12$

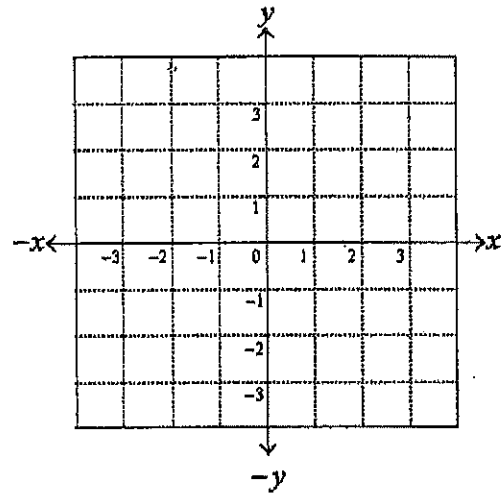14. _____

Graphing Linear Equations-
Graph the following linear equations in the given coordinate plane.

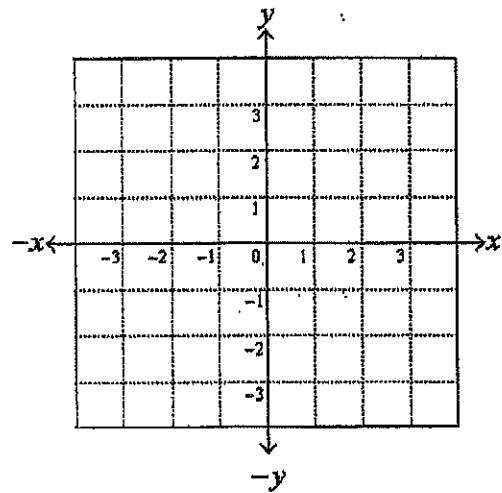15. $y = 1$ 15.

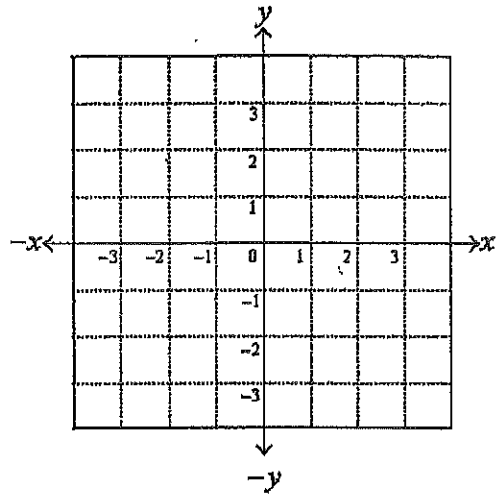16. $x = -3$ 16.

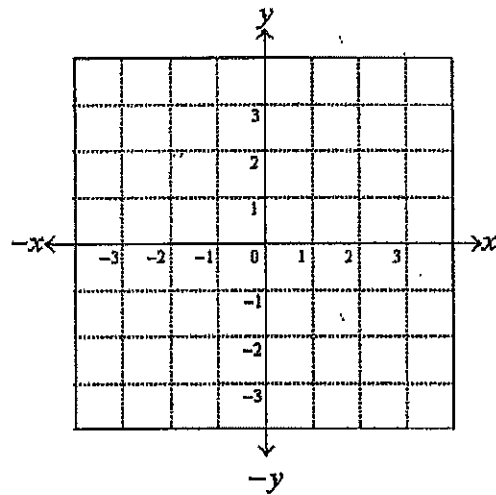17. $y = 2x$ 17.

18. $y = 3x - 3$ 18.

19. $y = -\dfrac{1}{2}x + 3$ 19.

Evaluating and Graphing Functions-

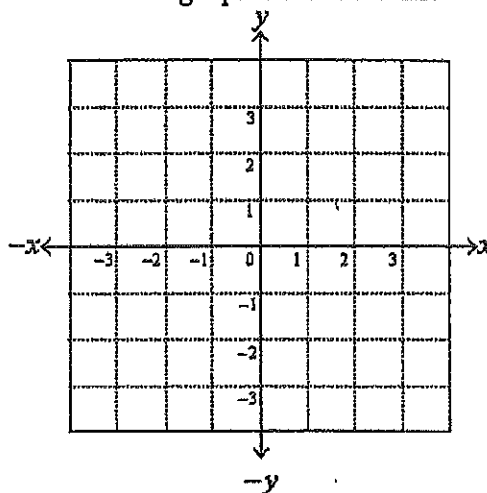For problems 20-21, find the values of the function for the given x-values. (Fill in the table)

20. $f(x) = \dfrac{x+3}{2}$

x	$f(x)$
-1	
0	
1	
3	

21. $g(x) = x^2 + 2x + 1$

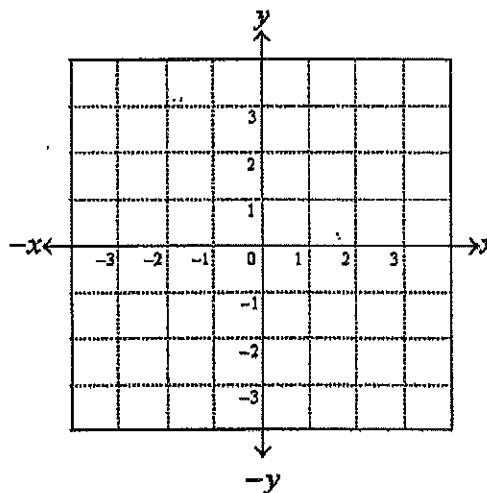| x	$g(x)$
-3	
-2	
-1	
0	
1	

For problems 22-23, use the tables from problems 20-21 to graph the functions.

22. $f(x) = \dfrac{x+3}{2}$ 22.

23. $g(x) = x^2 + 3x - 2$ 23.

Factoring-
For problems 24-33, factor each polynomial completely. If you think it is not factorable, write "prime".

24. $7x^2 - 14x$ 24. _____

25. $n^2 + 25$ 25. _____

26. $c^2 - 100$ 26. _____

27. $d^2 - 12d + 36$ 27. _____

28. $y^2 + 18y + 81$ 28. _____

29. $a^2 + 7a - 18$ 29. _____

30. $b^2 + 8b + 7$

31. $2x^2 - 3x - 5$

32. $4z^2 + 4z - 15$

33. $2ak + k - 6a - 3$

30. _____

31. _____

32. _____

33. _____

Simplifying Fractions and Rational Expressions-

34. $-\dfrac{9}{81}$

35. $\dfrac{48}{28}$

36. $\dfrac{20r^2}{16r}$

37. $-\dfrac{45p^6}{36p^3}$

38. $\dfrac{35k}{35k^2 - 50k}$

39. $\dfrac{m^2 - 2m - 48}{45m^2 - 5m^3} \bullet \dfrac{45m - 5m^2}{m + 7}$

40. $\dfrac{x + 7}{6x - 18} \bullet \dfrac{9x^2 - 81x}{9x^2 + 63x}$

34. _____

35. _____

36. _____

37. _____

38. _____

39. _____

40. _____