Geometry

UCS Summer Review Packet

(For students entering Geometry)

Name:_____ Class Period: _____

All of the concepts covered in this packet are prerequisite skills for Geometry.

These problems should be completed over the summer and ready to turn in on the first day of school! Late packets will NOT be accepted for full credit.

You MUST show all of your work to get full credit for a problem. Please put a box/circle around your answers and write neatly.

These problems are reflective of the knowledge that is prerequisite to the Geometry course.

A few good resources for your use in review would be:
www.khanacademy.org
www.patrickjmt.com
www.youtube.com

This assignment will be counted as your first test grade.

DIRECTIONS: Be sure you have read the cover page CAREFULLY. Remember... **SHOW ALL WORK** in the spaces provided. Be sure to put your answers in the blanks, whenever possible.

Evaluate.

_____1. $(x-4)+6$ for $x=10$

_____2. $(y-2)^2+(y+5)^2$ for $y=-3$

_____3. $(x-y)^2+2(x+y)$ for $x=9$ and $y=-2$

Simplify. Reduce fractions to simplest form. No calculator for #4-10. Show your work.

_____4. $-11.5+1.6+(-5.2)+0.7$

_____5. $-\frac{1}{6}-5+\frac{2}{5}-\frac{1}{15}$

_____6. $(-6)(7)$

_____7. $(-5.3)(2.1)$

_____8. $-\frac{1}{3}\div\frac{1}{15}$

_____9. $-\frac{2}{9}\div-\frac{2}{3}$

_____10. $\left(-\frac{2}{3}\right)\left(\frac{1}{5}\right)-\left(\frac{7}{15}\div\frac{28}{3}\right)$

_____11. What percent of 75 is 5?

_____12. 150 is what percent of 750?

For #13-18, solve for x or y.

_____13. $5x-12=48$

_____14. $0.4x-1.6=2.4x$

_____15. $\frac{-1}{2}y=4$

_____16. $y-6<10$

_____17. $8y-3>2y+15$

_____18. $23-7x\geq 3x\geq -7$

_____19. Two fifths of the automobiles entering the city every morning will be parked in city parking lots. These cars fill 5282 parking spaces. How many cars enter the city each morning?

_____20. A rectangular wading pool is 4.5 meters wide. What length will make the area 54 meters squared?

Simplify completely.

_____21. $a^3 \bullet a^2$

_____22. $(-2x)(5x^2)$

_____23. $\dfrac{5m^7}{m^3}$

_____24. $\dfrac{-10x^5}{2x^2}$

_____25. $\dfrac{-27x^2y^3}{3xy}$

_____26. $\dfrac{(2x^5y^3)^2}{(6x)^3}$

_____27. $-4x^2y^3z^5(2xy^2 - z)$ (Hint: Be Sure to use the distributive property!)

_____28. $-50a^2bc \div 2.5a^3c$

_____29. $23a^2 - 17a - 3a^2 - a + 5$

_____30. $(3m^2 - 9) + (5m^3 - 2m^2 + 1)$

_____31. $(-5a^2 - 2a) - (a^2 - 7a) + 2$

_____32. $(-7a^3 - 2a^2 + 5) + (-5a^4 + 3a^3 - 6a^2 - 1)$

_____33. $(2b-1)(2b+1)$

_____34. $(a-3)^2$

_____35. $(2m-6)^2$

Factor completely. (Hint: For #36, 38, & 39, take out a common factor first, and then factor again.)

_____36. $m^5 - m^3$

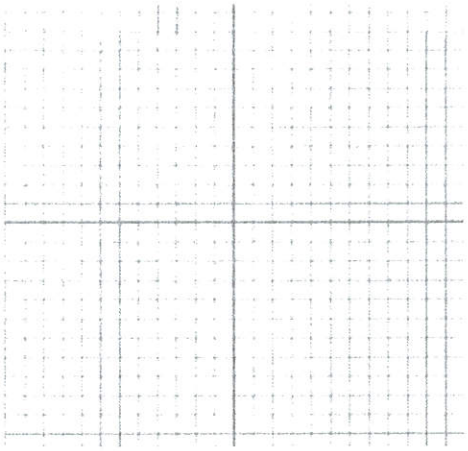
_____37. $49x^2 - 64$

_____38. $x^3 - 50x^2 + 625x$

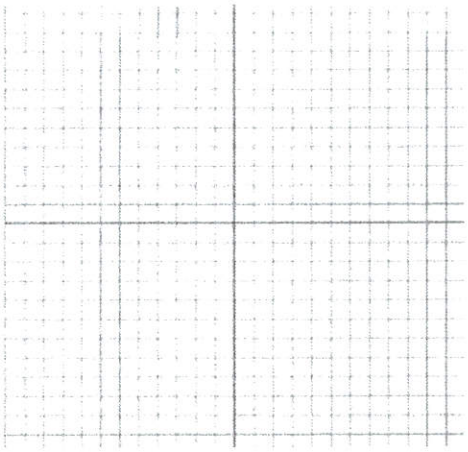
_____39. $30x^4 + 21x^3 - 36x^2$

Graph.

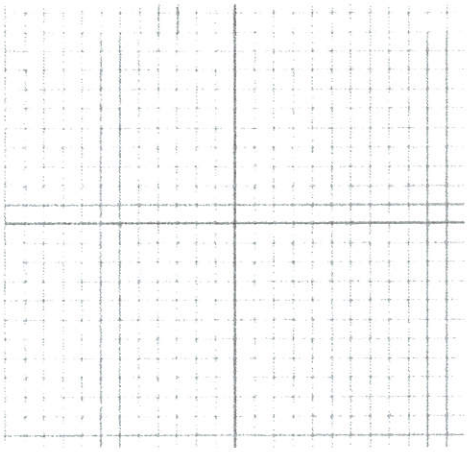
40. $2x+4y=4$



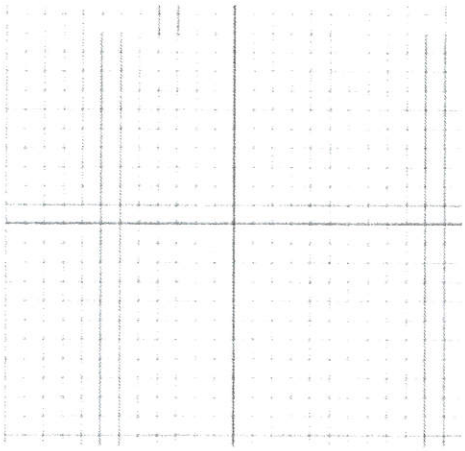
41. Graph $x=-3$



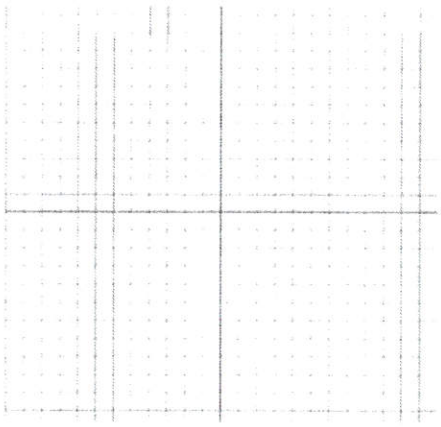
42. Graph $y=2$



43. Graph $y = 2x - 5$



44. Graph $y = -\frac{1}{2}x + 3$



Find the slope and y-intercept of each line.

_____ 45. $y = \frac{1}{2}x - 6$

_____ 46. $2y = -6x + 4$

_____ 47. $5x - 10y = 250$

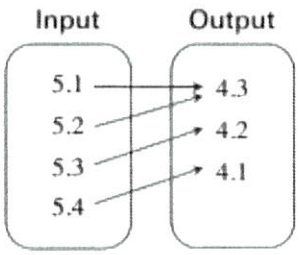
_____ 48. $3y - 5x - 2 = 0$

Tell whether the pairing is a function. If it is a function, identify the domain and range.

_____ 49.

Input	Output
7	4
2	2
5	1
3	5

_____50.



_____51.

Input	Output
25	14
30	13
30	12
35	11

_____52. Is (4,2) a solution to this system of equations? Show your work!

$x+y=6$ and $2x-y=6$

_____53. Is (1,2) a solution to this system of equations? Show your work!

$3y=-6$ and $y=-2x+1$

Solve each system of equations. You may use either substitution or elimination.

_____54. $y=x-10$ and $5y+10x=10$

_____55. $2x-3y=10$ and $-3x+y=20$

_____56. $2x=3y+12$ and $2x-5y=8$

_____57. The difference of two numbers is 10. Two times the larger number is 20 more than the smaller.

What are the two numbers?

Solve each quadratic equation by factoring OR by using the quadratic formula. Show all work!

_____58. $s^2 + 10s = 0$

_____59. $w^2 - 169 = 0$

_____60. $2x^2 - 11x + 15 = 0$

_____61. $x^2 + 16 = 8x$

Simplify completely. Assume variables are nonnegative. Leave answers in simplified radical form.

_____62. $-\sqrt{64a^6}$

_____63. $\sqrt{48x^3y^4}$

_____64. $\sqrt{(x+3)^2}$

_____65. $\sqrt{3xy} \bullet \sqrt{4x^3y}$

_____66. $\sqrt{6}\left(\sqrt{10} + \sqrt{15}\right)$

_____67. $\left(2 - 2\sqrt{5}\right)^2$

Rationalize and simplify completely.

_____68. $\sqrt{\frac{1}{5}}$

_____69. $\frac{\sqrt{5}}{\sqrt{10}}$

_____70. $\sqrt{\frac{x^2}{12}}$