H. Geometry Summer Math Packet

Due by the 1st week of school.

These are all review topics of Algebra 1 and should be known at mastery level.

These topics will be tested the first week of school.

Simplify the following.

1. $4\sqrt{7}+3\sqrt{5}+5\sqrt{7}$

2. $5\sqrt{10}-3\sqrt{5}+4\sqrt{10}$

3. $4\sqrt{10}\cdot\sqrt{10}$

4. $\sqrt{6}(-2\sqrt{2}-\sqrt{3})$

5. $\sqrt[3]{48p^2q^3r^4}$

6. $\sqrt{x^6y}\bullet\sqrt{x^5y^4}$

7. $\sqrt{10}(\sqrt{2}+4)$

8. $-3\sqrt{6p^2}\bullet 4\sqrt{12p}$

9. $5\sqrt{3x}\left(2\sqrt{x}-3\sqrt{3x^3}\right)$

10. $\dfrac{\sqrt{32}}{\sqrt{2}}$

11. $\dfrac{4\sqrt{15}}{4\sqrt{10}}$

12. $\dfrac{2\sqrt{2}}{\sqrt{3}}$

13. $\frac{-2}{2\sqrt{3}}$

14. $-2x \bullet -4x^4y^3$

15. $3v^4 \bullet 4u^2$

16. $-3yx^3 \bullet -3yx^4 \bullet -3x^4$

17. $3u^2 \bullet -2v^2$

18. $(-2)^2$

19. $(4^2)^4$

20. $(2^3)^3$

21. $((-2)^3)^2$

22. $(-x)^3$

23. $(-2n)^2$

24. $(3b^4)^4$

25. $(-3v^2)^4$

26. $(-4xy)^4$

27. $(-4xy^3)^3$

28. $(-4y^3)^4$

Distribute & simplify:

29. $-8y(5y^2 - 3)$

30. $(5a - 2)(-2a + 3)$

31. $(3x + 2)(2x - 2)$

32. $(2x - 2)(3x + 3)(4x - 4)$

Factor completely (Remember to Factor by Grouping if necessary or find a GCF):

33. $x^2 + 2x - 63$

34. $y^2 + 15y - 3$

35. $12x - 4$

36. $9t^2 + 9t - 10$

37. $y^2 + 12y + 36$

38. $r^2 - 4$

39. $t^2 - 25$

40. $a^2 + 18a + 80$

41. $2x^2 + 7x + 6$

42. $6x^2 - 5x - 1$

43. $5x^2 + 15x - 20$

44. $25x^2 - 49y^2$

45. $62x^2 + 18\ x$

46. $3x^2 + 9x - 15$

47. $10p^2 - 55p + 60$

48. Is (-2, 4) a solution to the following system?

$2x - 2y = 8$

$x + y = 4$

49. Is (2, 1) a solution to the following system?

$4x + y = 9$

$3x + 14y = 20$

50. Find the equation of the line that is parallel to $y = -\frac{1}{2}x + 4$ and passes through (-2, 8).

51. Find the equation of the line that is parallel to $2x + 3y = 6$ and passes through (4, 1).

For **# 52-55**, determine:

a) if the lines are parallel, perpendicular, intersecting but not perpendicular, or coinciding.

b) how many solutions the system has.

52. $2x - 3y = -12$

$-6x + 9y = 36$

53. $8x - 4y = 12$

$y = 2x - 4$

54. $2x - 4y = -16$

$-x + 2y = 8$

55. $-6x + 2y = -2$

$y = -4x - 8$

Solve using substitution.

56. $y = x + 6$

$y = -4x - 9$

57. $8x + y = 2$

$4x + 4y = 8$

Solve using elimination.

58. $-x + 5y = -13$

$-4x - 5y = -2$

59. $3x + 5y = -23$

$-9x - 8y = 20$

Solve using any method you choose.

60. $\begin{cases} 4x-9y=-5 \\ 8x-10y=30 \end{cases}$

61. $\begin{cases} 10x-6y=12 \\ 5x-3y=6 \end{cases}$

62. $\begin{cases} -16x-2y=-12 \\ 8x+y=6 \end{cases}$

63. $\begin{cases} 5x-3y=-24 \\ 8x+y=-21 \end{cases}$

Solve the Application Problem

64. Nicole and Micaela are selling cheesecakes for a fundraiser. Customers can buy chocolate cheesecakes and cherry cheesecakes. Nicole sold 7 chocolate and 8 cherry cheesecakes for a total of $122. Micaela sold 7 chocolate and 1 cherry cheesecakes for a total of $52. Find the cost of a chocolate cheesecake and a cherry cheesecake.

SYSTEM OF EQUATIONS:

Chocolate: _____

Cherry:_____