Geometry **Summer Math Practice** **Summer 2018**

Please provide worked out solutions on loose leaf paper.

Fractions – These questions should be completed without the use of a calculator.

1. $\frac{5}{8}+\frac{7}{12}=$

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

3. $10\frac{1}{18}+3\frac{3}{4}=$

4. $5\frac{3}{4}-2\frac{1}{8}=$

5. $1\frac{7}{8}-2\frac{3}{4}=$

6. $1\frac{5}{6}+2\frac{7}{9}=$

Find each product or quotient. Simplify, if possible.

7. $(\frac{5}{9})(\frac{9}{10})$

8. $\left(1\frac{2}{5}\right)\left(2\frac{2}{7}\right)=$

9. $\left(3\frac{2}{5}\right)\left(1\frac{2}{3}\right)=$

10. $\frac{5}{8}\div\frac{3}{4}=$

11. $2\frac{3}{4}\div\frac{1}{5}=$

12. $6\frac{3}{4}\div\frac{9}{10}=$

Order of Operations – **These questions should be completed without the use of a calculator.**

Simplify each expression.

13. $14 - 16 \div 8 + 9 \cdot 5 =$

14. $[10 + (5^2 \cdot 2)] \div 6 =$

15. $\frac{5 \cdot 9 + 18 \div 3}{2 + 3 \cdot 5} =$

16. $8 \div [16 - 2(3 + 4)] + 4 =$

Distributive Property – **Apply the distributive property. Then simplify by combining like terms.**

17. $(3y + 1)(-2) + y$

18. $-4(y + 2) - 6y$

19. $7x - 3x(x + 1)$

20. $-x^3 + 2x(x - x^2)$

Solving Equations – **Solve the equation.**

21. $3(x + 2) = 3x + 6$

22. $3x - 7 + x = 5$

23. $4(1 - x) + 3x = -2(x + 1)$

24. $4x - 3(x - 2) = 21$

25. $66 = -\frac{6}{5}(x + 3)$

26. $5m - (4m - 1) = -12$

27. $3.2x - 0.05 = x + 0.06$

28. $\frac{1}{2}x - \frac{1}{6}x = \frac{2}{3}$

Function Notation **– Evaluate the function for the given value of the variable.**

29. $f(x) = -x - 5;\ f(-2) =$

30. $g(x) = 2x^2 - 6; g(-3) =$

31. $f(x) = x^2 + x + 1;\ f(-1) =$

32. $f(x) = (x - 1)^2;\ f(4) =$

Writing Linear Equations **– Write the final equation in slope-intercept form.**

33. Write an equation of the line that passes through the point (6, -3) and has a slope of -2.

34. Write an equation of the line that has an x-intercept of 2 and a slope of -2/3.

35. Write an equation of the line that is parallel to $y = 2x + 2$ and contains the point (3, 2).

36. Write an equation of the line that is perpendicular to $y = -4x + 6$ and contains point (0, 2).

37. Write the equation of the line that passes through points (-6, -5) and (1, 4).

38. A line with zero slope is _____ and a line with undefined slope is _____.

39. Write an equation in standard form of the horizontal line that passes through point (2, -4).

40. Write an equation in standard form of the vertical line that passes through point (-1, 4).

Solving Inequalities **– Solve the inequality and graph its solution.**

41. $8 + x \leq -9$

42. $-x - 4 > 3x - 2$

43. $-2 \leq 3x - 8 \leq 10$

44. $3x + 1 < 4 \; or \; 2x - 5 > 7$

45. $|x - 4| < 3$

46. $|2x + 1| - 3 \geq 6$

Solving Linear Systems **– Solve the linear system by the given method.**

47. Use Substitution: $5x + 6y = 14$

$y = 4x - 17$

48. Use Elimination: $3x + 2y = 5$

$4x - 5y = 22$

49. Use Elimination: $x + 2y = 5$

$5x - y = 3$

50. Your teacher is giving a test worth 150 points. There is a total of 42 five-point and two-point questions. How many two-point questions are on the test?

Exponents **– Simplify each expression.**

51. $2x^3 \cdot (3x)^2$

52. $(-3x^2)^3$

53. $-64^{\frac{1}{3}}$

54. $(2t)^3(-t^2)$

55. $8^{\frac{2}{3}}$

56. $(-4x)^{-3}$

57. $(-10a)^0$

58. $\left(\frac{-4x^2}{2x^{-1}}\right)^{-1}$

59. $\left(\frac{2x^3y^4}{3xy}\right)^3$

Adding, Subtracting, and Multiplying Polynominals – Solve.

60. $(2a^4 - 4a + 9) + (-a^4 + a^6 + 4a - 2a^5) =$

61. $7y^2 - 8y^3 + 3y^2 - 4 - (y^3 - 5y^2) =$

62. $(3a - 5)(2a + 3) =$

63. $(2x + 3)(3x^2 + 2x - 5) =$

64. $(3x - 7)^2 =$

65. $-x^3(5x^4 + 6x^2) =$