

## Summer Assignment for incoming Geometry students – Greenwood Lakes Middle School

Name: \_\_\_\_\_

Command of the topics in this assignment are important to be successful in Geometry. These problems should all be completed correctly (not attempted), and ***all work must be shown***. It is your responsibility to know and understand these topics *before* the start of the school year. This assignment will be due the week of August 10<sup>th</sup>; a specific date will be given by your teacher.

### Solve each equation.

1.  $2x - 6 + 3x = 14$

2.  $5x - 12 = 3x + 7$

3.  $5(x + 4) - 6x = -24$

4.  $\frac{2}{9}(9x - 27) + 1 = 37$

5.  $\frac{3}{14} = \frac{x-2}{21}$

6.  $\frac{5}{x+3} = \frac{x}{2}$

### Solve by Factoring.

7.  $x^2 + 7x + 10 = 0$

8.  $3x^2 + 2x = 8$

9.  $2x^2 + 9x = 0$

### Solve using the Quadratic Formula.

10.  $x^2 + 5x - 4 = 0$

11.  $10x^2 = 3 + 13x$

### Solve the System of Linear Equations.

12.  $\begin{cases} -6x + 9y = -45 \\ 6x + 4y = -46 \end{cases}$

13.  $\begin{cases} 3x + 4y = 9 \\ y = 2 - x \end{cases}$

14.  $\begin{cases} 2x + 4y = -4 \\ 3x + 5y = -3 \end{cases}$

### Find the slope, x-intercept, and y-intercept.

15.  $2y + 2x = 12$

16.  $2x + 4y = 6$

### Write the equation of a line in slope-intercept form that has a:

17. slope of  $-4$  and a y-intercept of  $5$

18. slope of  $2$  and y-intercept of  $3$

**Graph each line on a sheet of graph paper.**

19.  $y = 4$  slope: \_\_\_\_\_ y-intercept: \_\_\_\_\_

20.  $x = -3$  slope: \_\_\_\_\_ y-intercept: \_\_\_\_\_

21.  $y = -2x + 1$  slope: \_\_\_\_\_ y-intercept: \_\_\_\_\_

22.  $2y + 2x = 4$  slope: \_\_\_\_\_ y-intercept: \_\_\_\_\_

**Simplify the expression.**

23.  $2x + 5 + 3x - 1$

24.  $2(5x - 7) + 2(2x - 3)$

25.  $3x + 4(2x - 1)$

26.  $2x(x - 5) + 3x(4x - 6)$

27.  $(x + 3)(x + 5)$

28.  $(2x - 1)(3x - 5)$

29.  $(5x + 2)(4x + 9)$

30.  $180 - (x - 30)$

**Simplify.**

31.  $\sqrt{20}$

32.  $\sqrt{18}$

33.  $\sqrt{13^2} + (3\sqrt{2})^2$

34.  $\frac{7\sqrt{3}}{\sqrt{3}}$

35.  $36\pi + 25\pi$

**Factor the polynomials.**

36.  $4x + 6$

37.  $x^2 + 6x$

38.  $12x^2 - 18x$

39.  $x^2 - 16$

40.  $4x^2 - 25$

41.  $x^2 - 12x + 20$

42.  $x^2 - 2x - 15$

43.  $x^2 - 7x$

44.  $2x^2 - x - 3$

45.  $3x^2 + 20x - 7$