



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

# **Algebra 1- Part 2**

## **Summer Review Packet**

### **DUE THE FIRST DAY OF SCHOOL**

#### **About Algebra 1:**

Algebra 1 teaches students to think, reason and communicate mathematically. Students use variables to determine solutions to real world problems. Skills gained in Algebra 1 provide students with a foundation for subsequent math courses. Students use a graphing calculator as an integral tool in analyzing data and modeling functions to represent real world applications. Each student is expected to have a graphing calculator in class every day. Students are expected to use calculators in class, on homework, during tests, during midterm and final exams and during PARCC tests. Robbinsville High School recommends a [TI84+](#) graphing calculator.

In May, all Algebra 1 students will be required to take and pass the Algebra 1 Partnership for Assessment of Readiness for College and Careers (PARCC) Assessment.

#### **Expectations for the Summer Packet:**

The problems in this packet are designed to help you review topics that are important to your success in Algebra 1. All work must be shown for each problem. The problems should be done correctly, not just attempted.

The packet is due on the first day of school. During the first week of school, concepts in the packet will be reviewed.

***All work should be completed and ready to turn in on the first day of school.***

Algebra 1- Part 2

Evaluate each expression if  $a = 2$ ,  $b = 8$ ,  $c = 12$ ,  $d = 10$ ,  $e = 1$ , and  $f = 3$ .

1. $2a + 3b =$	2. $\frac{1}{2}b + c + 2d =$	3. $\frac{c - 3a}{5b - 22} =$	4. $\frac{f}{b} + \frac{f}{a} =$
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Find the value of each power expression or square root.

5. $8^4 =$	6. Eleven squared =	7. $0^5 =$	8. $2^4 + 4^2 =$
9. $\sqrt{16} =$	10. $\sqrt{100} =$	11. $\sqrt{81} =$	12. $\sqrt{1} =$



Algebra 1- Part 2

Simplify each expression.

13.  $10 - 4y + 3 - 8 - (-7x) - 4y$

14.  $-3x + 8 - y + 4 - 2x + 8y$

15.  $-3x + 10 - 5y + 2x + y^2 - 4y$

16.  $3x^2 + 6 - 4x + 8y^2 - 3 + x - x^2$

17.  $7x - 5(3 + 2x)$

18.  $2(7 - 14x) - 3(2x + 4y)$

19.  $7(2x - 8) - 6(4x + y) + 2x(4x - 1) - (-7y)$

20.  $-3 + \frac{1}{2}(4x - 12y) + 2x - y + 18$



**Directions:** Solve the equation, if possible. Check your solution.

21.  $-\frac{2}{3}x = 8$

22.  $7m - 4 - 2m = 6$

23.  $9 - 2x = 2(x + 8) + 1$

24.  $2 - 15n = 5(-3n + 2)$

25.  $2(3g + 2) = \frac{1}{2}(12g + 8)$

26.  $\frac{1}{3}(3x - 12) = 6 - 2(x - 1)$

Algebra 1- Part 2

Circle the mistake and redo it correctly.

27.

$$\begin{array}{r} 12 - 2x \neq -4 \\ -12 \quad \neq -12 \\ \hline 2x \neq -16 \\ \frac{2x}{2} \neq \frac{-16}{2} \\ \hline x \neq -8 \end{array}$$

28.

$$\begin{array}{r} 9 - 5x \neq 24 \\ +9 \quad \neq +9 \\ \hline -5x \neq 33 \\ \frac{-5x}{-5} \neq \frac{33}{-5} \\ \hline x \neq -\frac{33}{5} \end{array}$$

29.

$$\begin{array}{r} 18 - 8x \neq 16 \\ -18 \quad \neq -18 \\ \hline -8x \neq -34 \\ \frac{-8x}{-8} \neq \frac{-34}{-8} \\ \hline x \neq \frac{17}{4} \end{array}$$

27.

28.

29.

**Directions:** Solve the proportion. Check your solution.

30.  $\frac{k}{9} = \frac{63}{81}$

31.  $\frac{-5n}{4} = \frac{15}{2}$

32.  $\frac{34}{6} = \frac{2x+1}{3}$

33.  $\frac{-4a-1}{-10a} = \frac{3}{8}$

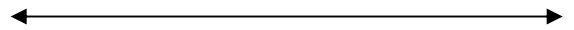


**Directions:** Solve the inequality, if possible. Graph your solution.

Algebra 1- Part 2

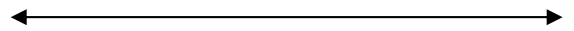
34.  $x + 8 > -10$

34. \_\_\_\_\_



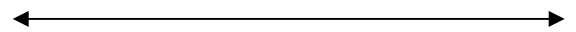
35.  $\frac{y}{-4} < -3$

35. \_\_\_\_\_



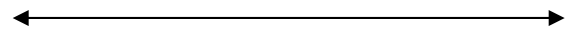
36.  $4a - 8 < 2a$

36. \_\_\_\_\_



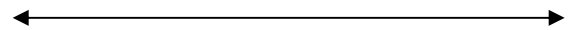
37.  $2(3x - 1) > 6(x + 1)$

37. \_\_\_\_\_



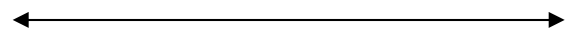
38.  $3(2p - 5) \geq 8p - 5$

38. \_\_\_\_\_



39.  $5(2s + 7) - 4 > 10s - 7$

39. \_\_\_\_\_





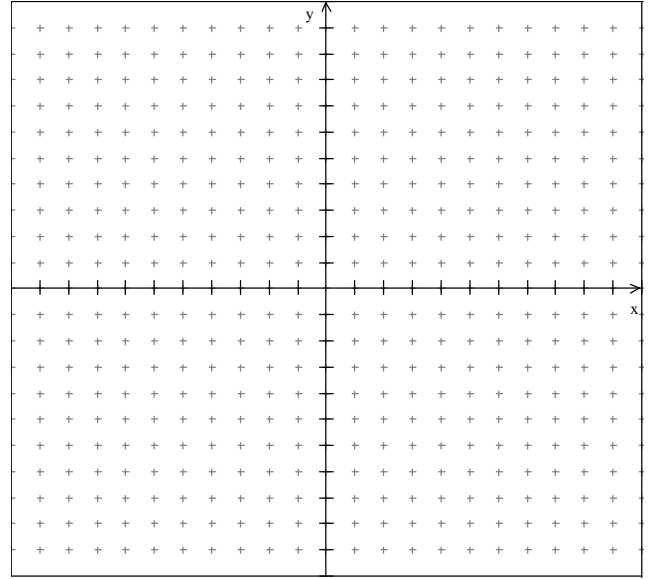
Determine the slope,  $x$  intercept and  $y$  intercept given a Slope-Intercept Form equation and graph.

40) Equation:  $y = -\frac{1}{2}x - 2$

Slope: \_\_\_\_\_

$y$ -int: \_\_\_\_\_

$x$ -int: \_\_\_\_\_

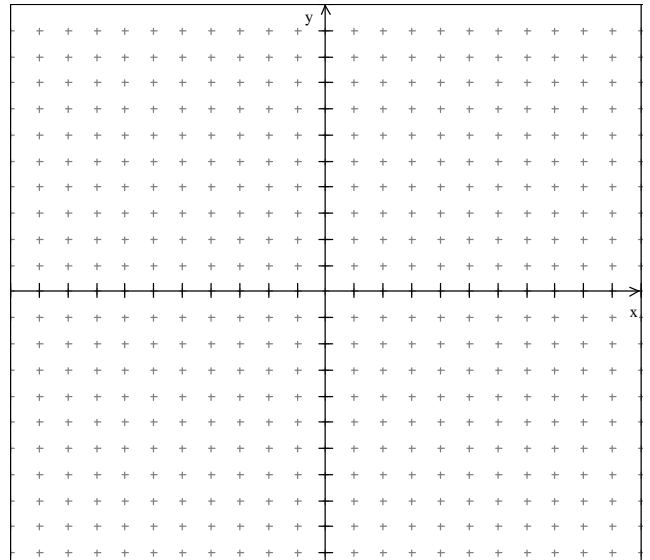


41) Equation:  $y = 3x - 4$

Slope: \_\_\_\_\_

$y$ -int: \_\_\_\_\_

$x$ -int: \_\_\_\_\_

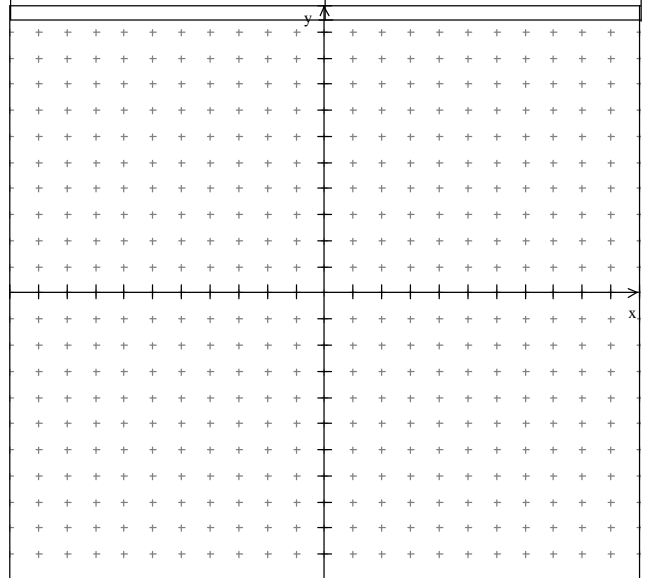


42) Equation:  $x + 2y = -10$

Slope: \_\_\_\_\_

$y$ -int: \_\_\_\_\_

$x$ -int: \_\_\_\_\_



Algebra 1- Part 2

Determine the Slope-Intercept Form equation, slope,  $x$  intercept and  $y$  intercept given two points and graph.

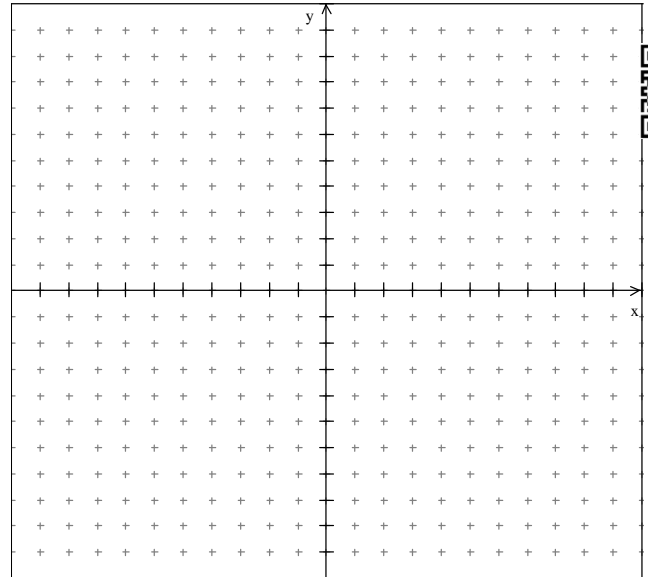
43) Given:  $(-1, 4)$  and  $(0, 1)$

Equation: \_\_\_\_\_

Slope: \_\_\_\_\_

$y$ -int: \_\_\_\_\_

$x$ -int: \_\_\_\_\_



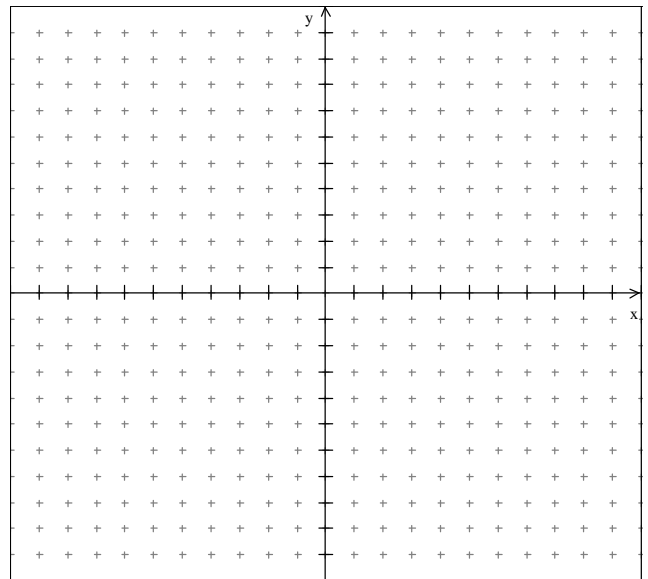
44) Given:  $(0, 3)$  and  $(4, -4)$

Equation: \_\_\_\_\_

Slope: \_\_\_\_\_

$y$ -int: \_\_\_\_\_

$x$ -int: \_\_\_\_\_



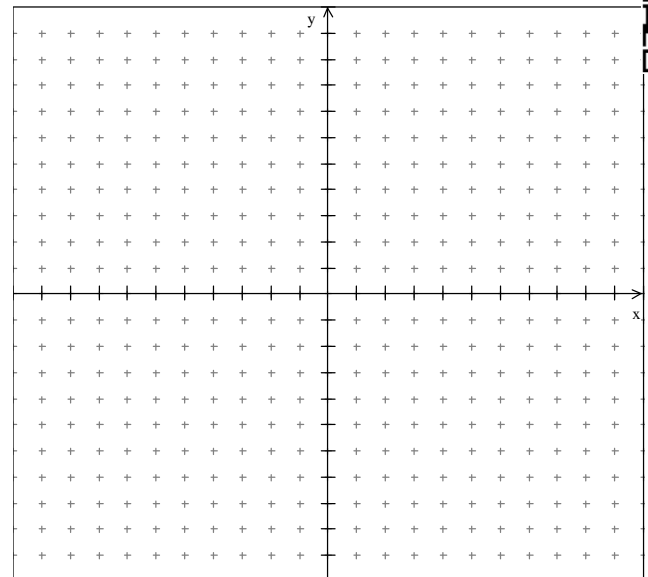
Determine the slope,  $x$  intercept and  $y$  intercept given a Standard Form equation and graph.

45) Equation:  $4x - y = 1$

Slope: \_\_\_\_\_

$y$ -int: \_\_\_\_\_

$x$ -int: \_\_\_\_\_





Algebra 1- Part 2

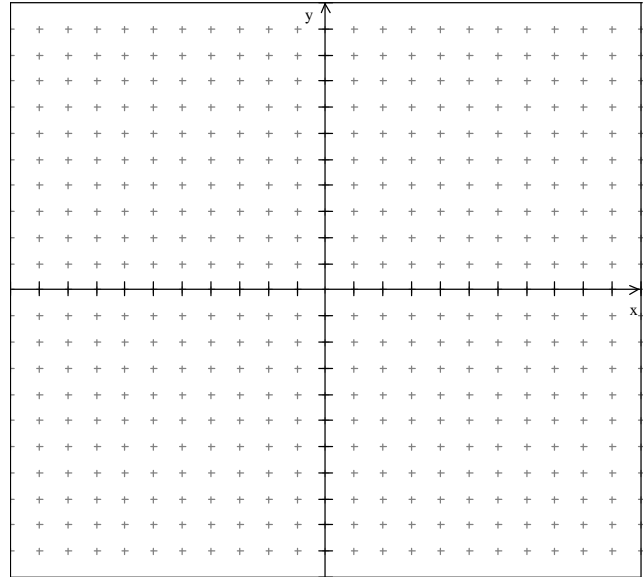
Determine the slope, x intercept and y intercept given a Standard Form equation and graph.

46) Equation:  $x = 0$

Slope: \_\_\_\_\_

y-int: \_\_\_\_\_

x-int: \_\_\_\_\_



Solve the equation for the variable.

47)  $-125 = -5(5 + x)$

48)  $-9 = -5 + \frac{x}{4}$



49)  $12 = -3(4 - 6n) - (6 + 3n)$

50)  $55 = 5(-4p + 7) - 4(5p - 5)$

51)  $-\left(-\frac{5}{4}k + 1\right) = \frac{3}{4}\left(k - \frac{6}{5}\right)$

52)  $\frac{6}{7}\left(7p + \frac{11}{7}\right) = \frac{9}{2}\left(p + \frac{4}{7}\right)$

53)  $-5.2(7.5n + 5.7) - 7.1(7.8 - 3.9n) = -25.077$     54)  $5.9(k + 2.56) = -5.4k - 5.9(1 - 4.24k)$

Algebra 1- Part 2

Solve the equation for the variable.

55)  $\frac{x}{5} - 7 = -5$

56)  $-5 - 3(6x + 4) = 73$



57)  $8(1 - 8x) = 8 + 7x$

58)  $4 - 2(x - 6) = 6x + 8$

Solve the inequality for the variable.

59)  $-47 > -5 - 6(1 + 2x)$

60)  $-5x + 4(5 - 2x) \leq 3x + 36$



Solve the system of linear equations using Elimination. Answers should be expressed as fractions where appropriate.

61) 
$$\begin{cases} 3x + 5y = 29 \\ 6x + 3y = 9 \end{cases}$$

62) 
$$\begin{cases} x - 7y = -28 \\ 9x + 4y = 16 \end{cases}$$



63) 
$$\begin{cases} 6x + 12y = -5 \\ -4x - 9y = 4 \end{cases}$$

64) 
$$\begin{cases} -7x + 2y = 16 \\ 2x + 5y = 12 \end{cases}$$