

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

## Honors Algebra I Summer Work

Welcome to Honors Algebra I! Algebra I is the foundation of all future math courses. The purpose of this summer work assignment is to review your Pre-Algebra skills. Students should complete this assignment prior to the start of school. **Note: Students will submit summer work to their teacher within the first week of class. Summer work will count as multiple daily grades.** Students should complete this assignment without the use of a calculator.

### Part 1: Fractions: Write your answer in simplest form. Leave as improper fractions.

1.)  $\frac{2}{3} + \frac{7}{8}$

2.)  $\frac{13}{20} - \frac{2}{5}$

3.)  $\frac{5}{6} - \frac{8}{9}$

4.)  $1\frac{2}{3} + \frac{3}{4}$

5.)  $\frac{11}{3} \cdot \frac{9}{44}$

6.)  $\frac{3}{5} \cdot \frac{5}{6}$

7.)  $3\frac{1}{2} \cdot 1\frac{1}{2}$

8.)  $2\frac{1}{4} \div \frac{1}{2}$

9.)  $-\frac{9}{10} \div 3$

### Part 2: Algebraic Expressions Simplify each expression.

10.)  $8(x+1) - 12x$

11.)  $62 - 7 + 12w - 3z$

12.)  $9n - 8 + 3(2n - 11)$

13.)  $3(7x + 4y) - 2(2x + y)$

14.)  $15 + 8d - 24d + d - 3$

15.)  $9(b - 1) - c + 3b + c$

16.)  $20f - 4(5f + 4) + 16$

17.)  $8(h - 4) - h - (h + 7)$

18.)  $\frac{1}{2}(4x - 10) - 8x$

Evaluate each expression for  $a = 9$ ,  $b = -3$ ,  $c = -2$ ,  $d = 7$

19.)  $a - cd$

20.)  $\frac{a+d-c}{b}$

21.)  $(a - b)^2 + d(a + c)$

22.)  $2b^3 + c^2$

23.)  $4c - (b - a)$

24.)  $b + \frac{1}{2}[8 - (2c + a)]$

**Part 3: Algebraic Equations:**

**Solve each equation. Leave all answers as simplified fractions if necessary:**

25.)  $5x - 3 = -28$

26.)  $\frac{w+8}{-3} = -9$

27.)  $-8 + \frac{n}{4} = 13$

28.)  $9 - v = -12$

29.)  $22 = 6y + 7$

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

31.)  $8x = 4 = 3x + 1$

32.)  $-2(5d - 8) = 20$

33.)  $5(3r - 2) = 5(4r + 1)$

34.)  $-2(y - 1) = 4y - (y + 2)$

35.)  $8 - 2(4v + 6) = -4 - 8v$

36.)  $4(x + 5) - 6 = 2(2x + 3)$

**Proportions:**

37.)  $\frac{3}{9} = \frac{5}{m}$

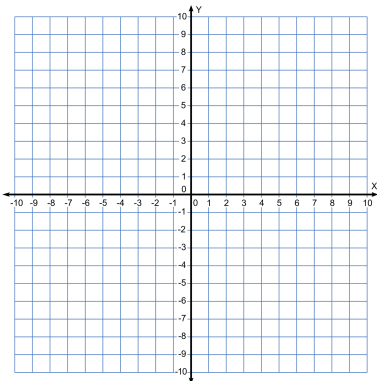
38.)  $\frac{7}{k-2} = \frac{5}{8}$

39.)  $\frac{7}{9} = \frac{b}{b-10}$

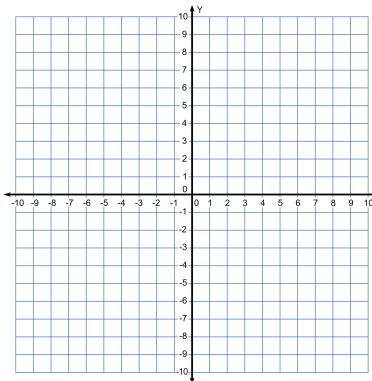
**Part 4: Linear Equations:**

**Graph the following equations:**

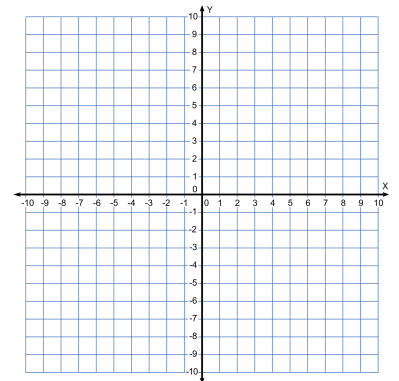
40.)  $y = \frac{1}{2}x - 6$



41.)  $y = -2x + 7$



42.)  $y = 3 - \frac{3}{2}x$



**Find the slope given the following points.**

43.) (0, -2) and (3, 4)

44.) (-1, -3) and (2, -5)

45.) (4, -3) and (3, -6)

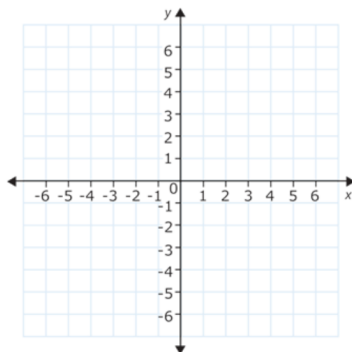
**Part 5: Systems of Equations:**

**Solve the following system of linear equations using the indicated method:**

46.) Graphing:

$$y = -3x + 2$$

$$y = 2x - 3$$



47.) Substitution:

$$2x + y = 11$$

$$y = 3x - 9$$

48.) Substitution

$$x - 2y = 8$$

$$x = 5y - y$$

49.) Elimination:

$$2x + 3y = 15$$

$$x - 3y = 3$$

50.) Elimination:

$$7x + 10y = 13$$

$$6x + 10y = 14$$