**WHAT YOU NEED TO KNOW FOR:**

**ALGEBRA**

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

**Due on the second Friday of the school year!**

1. Integer Operations

Resources: KhanAcademy.org - Adding numbers with different signs (video), Adding & subtracting negative numbers (video), Multiplying and dividing negative numbers (video)

**Apply the integer operation for each problem.**

1. Combining Like Terms

Resources: KhanAcademy.org - Distributive property over addition (video), Distributive property over subtraction (video), Combining like terms (video)

**Combine like terms for each problem. Use the Distributive Property when required.**



1. Solving Equations

Resources: KhanAcademy.org – One-Step Addition Equations (video), One-Step Subtraction Equations (video), One-Step Multiplication Equations (video), One-Step Division Equations (video), Intro to two-step equations

**Solve each equation.**

$3x=18$ $\frac{x}{4}=-5$ $x-12=8$

$3x-9=18$ $\frac{x-2}{4}=-5$ $4x-12=8$

1. Solving Inequalities

Resources: KhanAcademy.org – One-step inequalities examples (video), One-step inequalities: -5c ≤ 15 (video), One-step inequality involving addition (video)

**Solve each inequality.**

$2x\leq -10$ $-\frac{x}{7}\geq -2$ $x+15<10$

$2x-7<-10$ $\frac{x+7}{5}\leq 3$ $-4x+2\geq 26$

1. Arithmetic and Geometric Sequences

Resources: KhanAcademy.org – Finding patterns in numbers (video)

**Determine the pattern and complete each sequence**

$2, 4, 6, 8, \\_\\_\\_\\_\\_, \\_\\_\\_\\_\\_, \\_\\_\\_\\_\\_,$

$2, 4, 8, 16, \\_\\_\\_\\_\\_, \\_\\_\\_\\_\\_, \\_\\_\\_\\_\\_,$

$10, 17, 24, 31, \\_\\_\\_\\_\\_, \\_\\_\\_\\_\\_, \\_\\_\\_\\_\\_,$

$160, 80, 40, 20, \\_\\_\\_\\_\\_, \\_\\_\\_\\_\\_, \\_\\_\\_\\_\\_,$

$1, 2, 4, 7, \\_\\_\\_\\_\\_, \\_\\_\\_\\_\\_, \\_\\_\\_\\_\\_,$

1. Writing Linear Expressions and Equations

Resources: KhanAcademy.org - Writing expressions word problems (video)

**Write an expression or equation for each scenario.**

A number multiplied by 6, then added by 8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A number divided by 3, then subtracted by 11. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A number added by 3, then multiplied by negative 4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A can company charges a $3.50 fee to call a cab and then charges $5 for every mile driven.

A customer paid $56 for a car ride. How far did the taxi drive, Write an equation and show your solution steps.

1. Plotting Points

Resources: KhanAcademy.org – Plotting a point (ordered pair) (video)

**Use the grid provided to complete the questions.**

**Write the point at each ordered pair.**

(-6, 9) \_\_\_\_\_\_ (5, 4) \_\_\_\_\_\_ (1, 4) \_\_\_\_\_\_ (-5, 8) \_\_\_\_\_\_

(-4, 3) \_\_\_\_\_\_ (-5, 2) \_\_\_\_\_\_ (3, -5) \_\_\_\_\_\_ (-4, 0) \_\_\_\_\_\_

**Write the ordered pair for each given point.**

R \_\_\_\_\_\_ G \_\_\_\_\_\_ B \_\_\_\_\_\_ Y \_\_\_\_\_\_

O \_\_\_\_\_\_ Q \_\_\_\_\_\_ U \_\_\_\_\_\_ W \_\_\_\_\_\_

**Plot the following points on the coordinate grid.**

T (-9, 5) N (9, -4) H (-8, -6) V (-1, 3)

X (-9, -4) A (-9, 2) J (-2, 2) C (9, 0)

1. Graphing Slope-Intercept Form

Resources: KhanAcademy.org – Graph from slope-intercept equation (video)

**Plot the y-intercept and use the slope (** $\frac{rise}{run}$ **) to graph each line.**