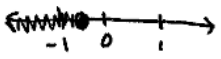
Algebra 2 H Name: Key
Inequalities, Graphing and Systems Stations Worksheet Date: Per:

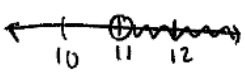
Station 1: Solving Inequalities

Practice Problems: Solve each inequality and graph your solution on a number line.

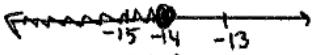
1. $-12 \geq 24x$ $x \leq -\frac{1}{2}$



2. $8a - 15 > 73$ $a > 11$

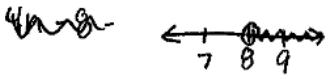


3. $-18 - 5y \geq 52$ $y \leq -14$



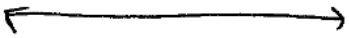
4. $4(x + 3) \leq 44$ $x \leq 8$

5. $4(n - 2) - 6 > 18$ $n > 8$



6. $3 + 5x < 5(x + 1)$ All R

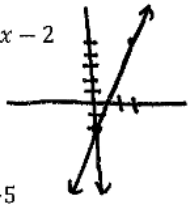
7. $4x - 8 > 1 + 4(x + 3)$ No solution



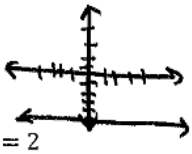
Station 2: Graphing Linear Equations

Practice Problems: Graph each of the following linear equations.

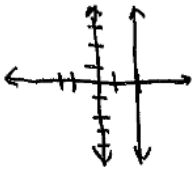
1. $y = \frac{7}{2}x - 2$



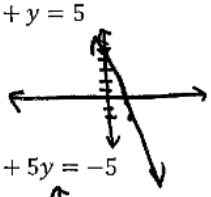
2. $y = -5$



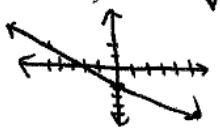
3. $x = 2$



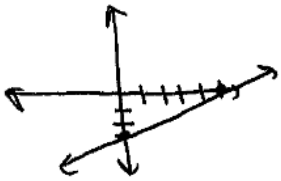
4. $7x + y = 5$



5. $3x + 5y = -5$



6. $3x - 5y = 15$



Station 3: Finding Key Features on a Calculator.

Practice: Let $f(x) = -x^2 + 4x - 5$ $g(x) = -x - 1$ $h(x) = \frac{2}{3}x - 1$

1. Find the maximum of $f(x)$. $(2, -1)$
2. Find the x-intercept of $h(x)$. $(1.5, 0)$ or $(\frac{3}{2}, 0)$
3. Find the intersection between $f(x)$ and $g(x)$ $(1, -2)$ $(4, -5)$
4. Find the y-intercept of $f(x)$. $(0, -5)$

Station 4: Solving a System of Equations by Elimination

Practice Problems: Solve each of the following systems of equations using elimination. Check your solutions

1. $-4x - 2y = -12$
   $4x + 8y = -24$
   $(6, -6)$

2. $-2x - 9y = -25$
   $-4x - 9y = -23$
   $(-1, 3)$

3. $8x + y = -16$
   $-3x + y = -5$
   $(-1, -8)$

4. $5x + y = 9$
   $10x - 7y = -18$
   $(1, 4)$

Station 5: Solving Systems of equations by Substitution

Practice Problems: Solve each of the following systems of equations by substitution. Check your solutions.

1. $x + y = 3$
   $2x - y = 0$
   $(1, 2)$

2. $2x - 2y = 10$
   $x - y = 5$
   infinitely many solutions

3. $x - 3y = -14$
   $x - y = -2$
   $(4, 6)$

4. $3x - 4y = 8$
   $2x + y = 9$
   $(4, 1)$

Station 6: Solving Systems of Equations by Graphing

Practice Problems: Solve the following by graphing. Check your solutions.

1. $2x = 3 - y$
   $y = 4x - 12$
   $(5/2, -2)$

2. $3y = -6x - 3$
   $y = 2x - 1$
   $(0, -1)$

3. $6y = 2x - 14$
   $x - 7 = 3y$
   infinitely many solutions

4. $2x = 2 - 9y$
   $21y = 4 - 6x$
   $(-1/2, 1/3)$