## Algebra 1 <br> Unit 4 Practice Assessment \#1

| Name | Date | Hour |
| :--- | :--- | :--- |


| Common Core Domain and Performance Outcome | Exceeds | Meets 3 | Approaching $2$ | Does Not Meet 1 |
| :---: | :---: | :---: | :---: | :---: |
| Reasoning with <br> Equations and <br> Inequalities <br> 4a: solve equations and inequalities in one variable | - Student can meet the criteria for a 3 and also solve equations containing fractions and decimals. <br> - Student made no mistakes | - Student can correctly use properties to solve equations and inequalities <br> - Student can identify when there is one solution, no solution, or infinitely many solutions <br> - Student can graph the solution to an inequality on a number line <br> - Minor errors can be made, including mistakes with positives and negatives and computation | - Student can solve onestep equations and inequalities, but have trouble with multi-step and with variables on both sides | - Student has some correct steps but work is not consistent |

## Solve each equation.

1. $2 x+7=5$
2. $-3 x+10+8 x=5(x+3)-5$
3. $2(4 x-3)=3+3 x-4$
4. $\frac{2 x+7}{3}=7$
5. $\frac{3}{2}=\frac{3 x-4}{7}$
6. $\frac{-3 x}{5}+\frac{x}{7}=\frac{2}{5}$

Solve the inequality and graph the solution on a number line.
7. $6 x+2>14$
8. $-7 x+3>2 x-6$

| Common Core Domain and <br> Performance Outcome | Exceeds <br> $\mathbf{4}$ | Meets <br> $\mathbf{3}$ | Approaching <br> $\mathbf{2}$ |  |
| :--- | :--- | :--- | :--- | :--- |
| Creating Equations and <br> Reasoning with Equations <br> and Inequalities <br> 4b: rewrite formulas in terms <br> of a specific variable and solve <br> literal equations | •Student can write answer in <br> a simplified form <br> $\bullet$ Student made no mistakes | • Student can solve literal <br> equations <br> - Minor errors can be made, <br> including mistakes with <br> positives and negatives and <br> computation | • Student can solve one-step <br> literal equations, but have <br> trouble with multi-step literal <br> equations | • Student has some correct <br> steps but work is not <br> consistent |

9. Solve for $y$ :

$$
3 x-4 y=12
$$

10. Solve the given equation for $W$.

$$
\text { Equation } \quad P=2 L+2 W
$$

| Common Core Domain and <br> Performance Outcome | Exceeds <br> $\mathbf{4}$ | Meets <br> $\mathbf{3}$ | Approaching <br> $\mathbf{2}$ |  |
| :--- | :--- | :--- | :--- | :--- |
| Reasoning with Equations and <br> Inequalities <br> 4c: solve equations using multiple <br> methods (tables, graphs, <br> technology, intersection of graphs) | - Student made no <br> mistakes | - Student can identify the solution <br> using the graph <br> - Student can verify the solution <br> - Minor errors can be made, <br> including misreading the graph | - Student can identify the <br> solution on the graph but is <br> unable to verify the solution | • Student does not know how <br> to use the graph to find the <br> solution to the equation |

11. Below is the graph of $f(x)=\frac{1}{2} x+2$ and
$g(x)=-2 x-3$.

a. Using the graph, circle and state the solution to the equation $\frac{1}{2} x+2=-2 x-3$.
b. Show why your answer in part a is the solution to the equation.

| Common Core Domain and <br> Performance Outcome | Exceeds <br> $\mathbf{4}$ | Meets <br> $\mathbf{3}$ | Approaching <br> $\mathbf{2}$ | Does Not Meet <br> $\mathbf{1}$ |
| :--- | :--- | :--- | :--- | :--- |
| Reasoning with Equations <br> and Inequalities <br> 4d: explain each step when <br> solving an equation using <br> properties of equality and <br> justify solutions | $\bullet$ Student made no <br> mistakes | • Student can explain how to solve an equation <br> using properties <br> - Student can justify the solution <br> - Minor errors can be made, including mistakes <br> with positives and negatives and computation | • Student cannot <br> provide reasons for <br> multiple steps in a <br> problem | $\bullet$ Student shows procedural <br> knowledge but cannot give <br> reasons for any steps |

12. Solve the following equation. Justify each step and justify (check) your solution.
Equation
Reasons
$2+4(x-3)=11-3 x$

| Common Core Domain and Performance Outcome | Exceeds 4 | Meets 3 | Approaching 2 | Does Not Meet $1$ |
| :---: | :---: | :---: | :---: | :---: |
| Creating Equations and Reasoning with Equations and Inequalities <br> 4e: graph the solutions to a linear inequality in two variables as a half-plane | - Student made no mistakes | - Student can correctly graph the boundary line <br> - Student shades the correct direction <br> - Minor errors can be made, including a slight mistake with slope and the $y$-intercept | - Student makes a major error when graphing the boundary line | - Student does not graph the line correctly and does not shade |

13. Graph the linear inequality $y \geq \frac{-2}{3} x-1$.


| Common Core Domain and Performance Outcome | $\begin{gathered} \text { Exceeds } \\ 4 \end{gathered}$ | Meets 3 | Approaching 2 | Does Not Meet 1 |
| :---: | :---: | :---: | :---: | :---: |
| Creating Equations <br> 4f: write equations and inequalities and use them to solve problems | - Student made no mistakes <br> - Student showed multiple ways to solve problems | - Student can write equations and inequalities given a context <br> - Student chooses a correct mathematical approach to solve a problem <br> - Student can use the equation or inequality he/she wrote to solve the problem | - Student can write equations and inequalities given a context, but major mistakes are made or pieces are missing <br> - Student uses the equation or inequality to solve the problem but the answer doesn't make sense | - Student is unable to write equations or inequalities given a context <br> - Student is unable to use the equation or inequality to solve the problem |

14. The length of a rectangle is three feet less than twice the width. The perimeter is 594 ft . Find the dimensions of the rectangle.
15. Find two consecutive integers such that their sum is 89 .
16. Yellow Cab Taxi charges a $\$ 1.75$ flat rate in addition to $\$ 0.65$ per mile. Katie has no more than $\$ 10$ to spend on a ride.
a. Write and solve an inequality to determine the maximum number of miles Katie can ride in a taxi without going over her \$10 limit.
17. A theater wants to take in at least $\$ 150$ for a certain movie. Children's tickets cost $\$ 10$ each and adult tickets cost $\$ 15$ each. Write and graph an inequality that models the different combinations of children's and adult tickets you can buy. Define variables and state the constraints. Give three possible combinations of children and adult tickets that will make their goal.

## Variables:



