Alg 3 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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 WS Assessment

 Target 2:

Absolute Equations

**I can:**

* Solve absolute equations by algebra and graph
* Identify and explain the extraneous solutions

**Unit 1: Solving Equation & Inequalities**

* **CCSS.Math.Content.HSA.CED.A.1**: Create equations and inequalities in one variable and use them to solve problems
* **CCSS.Math.Content.HSA.CED.A.2**: Create equations in two or more variables to represent relationships between quantities
* **CCSS.Math.Content.HSA.REI.A.2**: Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.
* **CCSS.Math.Content.HSA.CED.A.3**: Represent constraints by equations or inequalities, and by systems of equations and/or inequalities and interpret solutions as viable or nonviable options in a modeling context.
* **CCSS.Math.Content.HSA.CED.A.4**: Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.

HW#2 Absolute – [www.deltamath.com](http://www.deltamath.com)

Determine the value of y if x is

 y = |x| - 2 where x = -7 y = |x| +12 where x = -11

 y = |x – 12| where x = 5 y = |x – 12| where x = 5

Solve for all values of x

 |3x + 1| = 6 |2x = 5| = 8

 -3|5x + 7| + 1 = - 5 2 + |1 + 2x| = 11

 4|9 + 2x| - 4 = 36 4 - |x – 7| = - 1

 5|5x – 3| - 3 = 2 -|2 + 5x| + 1 = - 3

Solve the equation for all values of x by algebra and graph (stamp)

 |3x + 6| - 6 = x |2x – 9| = x

 |x + 9| = 2x |x + 8| - 4 = 5x

 |x + 9| = |x| |x+8| = |4x|

Write the following absolute value function as a piecewise function. Graph both ways for stamp

 $f\left(x\right)=|6-2x|$ $f\left(x\right)=|3x+9|$

Stamp

 $f\left(x\right)=|x^{2}+9x+14|$ $f\left(x\right)=|x^{2}+8x+12|$

Stamp

Solve the following problem, using absolute equation

1. A machine is used to fill each of several bags with 16 ounces of sugar. After the bags are filled, another machine weighs them. If the bag weighs .3 ounces more or less than the desired weight, the bag is rejected. Write this equation to find the heaviest and lightest bag the machine will approve. (Ans 16.3 and 15.7)
2. The average number of seeds in a package of cucumber seed is 25. The number of seeds in the package can vary by three. What are the maximum and minimum number of seeds that could be in a package?

1. The mean distance of the earth from the sun is 93 million miles. The distance varies by 1.6 million miles. What are the maximum and minimum distances of the earth from the sun?
2. Leona was in a golf tournament last week. All of her four rounds of gold were within 2 strokes of par. If par was 72, what are the maximum and minimum scores that Leona could have made in the golf tournament?
3. Victor has a goal of making $75 per week at his after-school job. Last month he was within $6.50 of his goal. What are the maximum and minimum amounts that Victor might have made last month?
4. Solve the following by both algebra and graph (sketch). Stamp

Amtrak s annual passenger revenue for the years 1980 2000 is modeled approximately by the formula R = -40|x - 11|+990 where R is the annual revenue in millions of dollars and x is the number of years since January 1, 1980. In what years was the passenger revenue $790 million?

**Assessment Target 2**

**I can…** solve absolute equations and identify extraneous solution

1. Determine the value of y if x is

 y = |x| - 5 where x = 10 y = |x| - 5 where x = -10

2. Solve the equation for all values of x

 |3x – 4| = x |2x + 8| - 7 = x

3. Write the following absolute value function as a piecewise function. Graph both ways for stamp

 $f\left(x\right)=|x^{2}-10x+21|$

4. Members of the track team can run 400 m in an average time of 58.2 seconds. The fastest and slowest times varied from the average by 6.4 seconds. What were the maximum and minimum times for the track team?