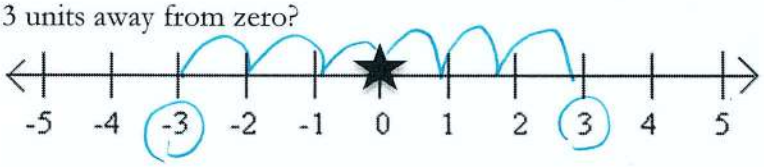
Name: Answer Key Period: _____

Unit 1 Day 10: Absolute Value Equations

A-REI.11: *I can explain why the x-coordinates of the points where the graphs of the equations y=f(x) and y=g(x) intersect are the solutions of the equation f(x)=g(x); find the solutions approximately. Include cases where f(x) and/or g(x) are absolute value functions.*

Absolute Value: measures the distance a number is from zero.

i.e. what number is 3 units away from zero?



When taking Absolute Value, your answer should be positive because it is measuring a distance.

1. $\|5\| =$ 5	2. $\|3\| =$ 3	3. $\|-3\| =$ 3

*****When solving for a variable inside Absolute Value, you should always have TWO answers!!*****

1. $\|x\| = 10$ $x = 10$ $x = -10$	2. $\|x\| = 17$ $x = 17$ $x = -17$	3. $\|x\| = 2$ $x = 2$ $x = -2$

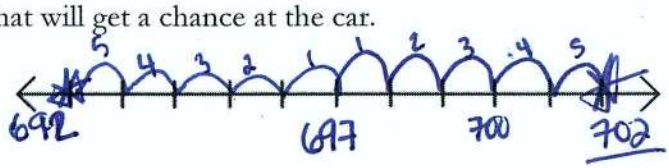
Writing and Solving Absolute Value Equations

|x − larger number| = smaller number

1. Honda is having a contest to win a new Honda Civic. To win a chance at the car, you must guess the number of keys in the jar within 5 of the actual number. The people who are within this range get to try a key in the ignition of the Civic. Suppose there are 697 keys in the jar.

a) Write an equation to determine the highest and lowest guesses that will get a chance at the car.

$|x - 697| = 5$



b) Solve the equation

$x - 697 = 5$
$+697 \quad +697$
$x = 702$ keys

$x - 697 = -5$
$+697 \quad +697$
$x = 692$ keys