Absolute Value Inequalities and Tolerance Practice Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Absolute Value Inequalities

1. the absolute value of 2 x minus 3 is less than 17 2. negative 6 times the absolute value of 4 minus 2 x is less than negative 24

3. the absolute value of 6 x minus 5 negative 2 is greater than or equal to 29 4. negative 5 plus 3 times the absolute value of 4 x negative 7 is less than or equal to 16

5. negative 9 times the absolute value of 5 x minus 4 positive 3 is greater than 3 6. 2 times the absolute value of 2 x minus 3 plus 6 is greater than or equal to negative 20

Tolerance

1) In scientific laboratory work, the error associated with a measurement is the amount by which the measurement differs from the true value. Error is expressed as a number greater than or equal to 0. The true value of the freezing point of a certain liquid is – 45°C, but it has been known to freeze between – 42°C and – 48°C. Write and solve an inequality that will describe the freezing point of this liquid.

2) A city ordinance states that pools must be enclosed by a fence that is from 3 to 8 ft high. Write an absolute value inequality describing fences that don’t meet this ordinance.

3) A fabrication shop has a tolerance of 0.0025 millimeters for the diameter a piston they are machining in the new HHO car. The piston should have a diameter of 8mm. Write and solve an absolute value inequality that describes unacceptable diameters of the pistons.