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Module 6 Solving Absolute Value Equations and Inequalities

Lesson 5 Solving Problems Using Absolute Value Equations and Inequalities



**guided
practice**

Set 1

1. The ideal total weight of a full box of cereal is 17 ounces. An inspector accepts a box if its weight is less than 0.5 ounce away from the ideal total weight. What is the range of acceptable weights?

$$|x - 17| < 0.5$$

$$16.5 < x < 17.5$$

Any box weighing more than 16.5 oz and less than 17.5 oz is acceptable.



2. At a bakery a machine pours out 55 g of flour. The machine is designed to be off by at most 1.2 g. What is the range of possible weights?

$$|x - 55| \leq 1.2$$

$$53.8 \leq x \leq 56.2$$

The machine pours out flour weighing from 53.8 g to 56.2 g.



3. Two sisters were born exactly two years apart. If one girl is twelve years old, how old is her sister?

$$|a - 12| = 2$$

$$a = 14 \text{ or } a = 10$$

The sister is either 10 years old or 14 years old.



4. To test the accuracy of a gas pump, an inspector fills a 5-gal (640-oz) container, then records the reading on the gas pump's gauge. If the reading is more than 3.3 oz from 5 gal, the pump should be repaired. What readings call for the pump to be repaired?

$$|x - 640| > 3.3$$

$$x > 643.3 \text{ or } x < 636.7$$

Any reading greater than 643.3 oz or less than 636.7 oz calls for the pump to be repaired.



5. A carnival worker claims to be able to guess your weight, never being off by more than 4 lb. For what weight guesses is the worker wrong if a person actually weighs 170 lb?

$$|x - 170| > 4$$

$$x > 174 \text{ or } x < 166$$

The worker is wrong for guesses greater than 174 lb and guesses less than 166 lb.

