

A company packages barbeque sauce in two different-sized bottles, small and large. Although the label on each small bottle states that the bottle contains 18 ounces of sauce, the company allows a tolerance of plus or minus 0.25 ounce for the amount of sauce in each small bottle. In manufacturing, tolerance is the amount of error that is allowed in packaging a product.

- a. What is the maximum amount of sauce, in ounces, the company allows in each small bottle? Show or explain how you got your answer.

In the absolute-value inequality below, x represents the amount of sauce, in ounces, the company allows in each small bottle.

$$|x - 18| \leq 0.25$$

- b. Solve the absolute-value inequality. Show or explain how you got your answer.

The company also makes a large bottle of barbeque sauce.

- The label on the large bottle states that each bottle contains 24 ounces of sauce.
 - The minimum amount of sauce allowed in each large bottle is 23.55 ounces.
 - The maximum amount of sauce allowed in each large bottle is 24.45 ounces.
- c. What is the tolerance, in ounces, the company allows for the large bottle? Show or explain how you got your answer.
- d. Write an absolute-value inequality that represents y , the amount of sauce, in ounces, the company allows in the large bottle.