



EXAMPLE 4 TAKS REASONING: Multi-Step Problem

COMPUTERS You are buying a new computer and find 10 models in a store advertisement. The prices are \$890, \$750, \$650, \$370, \$660, \$670, \$450, \$650, \$725, and \$825.

- Find the mean of the computer prices.
- You are willing to pay the mean price with an absolute deviation of at most \$100. How many of the computer prices meet your condition?

Solution

STEP 1 Find the mean by dividing the sum of the prices by 10.

$$\begin{aligned} \text{Mean} &= \frac{890 + 750 + 650 + 370 + 660 + 670 + 450 + 650 + 725 + 825}{10} \\ &= \frac{6640}{10} = 664 \end{aligned}$$

STEP 2 Write and solve an inequality. An absolute deviation of at most \$100 from the mean, \$664, is given by the inequality $|x - 664| \leq 100$.

$$|x - 664| \leq 100 \quad \text{Write absolute value inequality.}$$

$$-100 \leq x - 664 \leq 100 \quad \text{Write as compound inequality.}$$

$$564 \leq x \leq 764 \quad \text{Add 664 to each expression.}$$

► The prices you will consider must be at least \$564 and at most \$764. Six prices meet your condition: \$750, \$650, \$660, \$670, \$650, and \$725.

REVIEW MEAN

For help with finding a mean, see p. 918.



GUIDED PRACTICE for Example 4

7. **WHAT IF?** In Example 4, suppose that you are willing to pay the mean price with an absolute deviation of at most \$75. How many of the computer prices meet this condition?

CONCEPT SUMMARY

For Your Notebook

Solving Inequalities

One-Step and Multi-Step Inequalities

- Follow the steps for solving an equation, but reverse the inequality symbol when multiplying or dividing by a negative number.

Compound Inequalities

- If necessary, rewrite the inequality as two separate inequalities. Then solve each inequality separately. Include *and* or *or* in the solution.

Absolute Value Inequalities

- If necessary, isolate the absolute value expression on one side of the inequality. Rewrite the absolute value inequality as a compound inequality. Then solve the compound inequality.