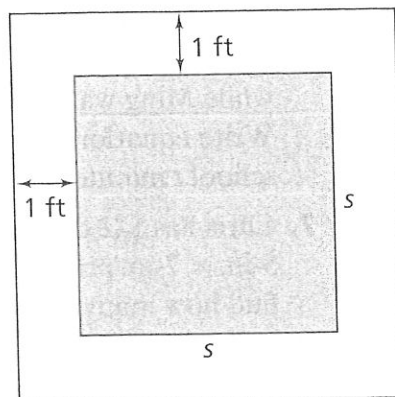


Problem 47

Ahmad and Shada's aunt keeps some square tomato gardens on her farm. This summer, rabbits have been eating the tomatoes. Ahmed learned that marigolds keep rabbits away from tomato plants. He decides to help his aunt by planting a 1-foot border of marigolds around each tomato garden.



- A. 1.** Ahmad writes an expression for the perimeter of a garden as $s + s + s + s$. Shada writes the expression $4s$ to represent the perimeter. Whose expression is correct? Explain how you know.
- 2.** Write an expression to represent the perimeter of a garden after a 1-foot border of marigolds is added.
- B.** Three of the tomato gardens have side lengths of 6 feet, 10 feet, and 13 feet.
- 1.** Ahmed uses the expression $s + 2 + s + 2 + s + 2 + s + 2$ to find the perimeter after the border of marigolds is added. Use this expression to find the perimeter of each size garden.
 - 2.** Shada uses the expression $4(s + 2)$ to find the perimeter after the border of marigolds is added. Use this expression to find the perimeter of each size garden.
 - 3.** What do you notice about the perimeter of each garden found using the different expressions? Explain what that tells you about the expressions.
- C.** Their uncle says that the outside perimeter of any garden also could be found using the expression $4s + 8$. Is this expression equivalent to those written by Ahmed and Shada? Explain your reasoning using the garden with side lengths of 6 feet.