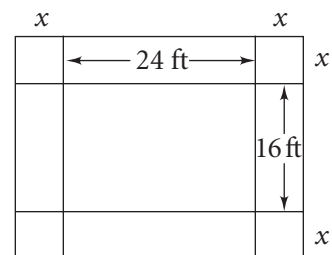


5-5 • Guided Problem Solving

GPS Student Page 271, Exercise 35

Gardening Suppose you want to expand the garden shown here by planting a border of flowers. The border will be of the same width around the entire garden. The flowers you bought will fill an area of 276 ft^2 . How wide should the border be?



Read and Understand

1. What are the dimensions of the original garden? _____
2. What is the area of the original garden? _____
3. What is the area of the border that will be filled with flowers? _____

Plan and Solve

4. Write two expressions, one representing the length of the new garden and one representing the width of the new garden.
length _____ width _____
5. Write an equation where the area of the border equals the area of the original garden subtracted from the area of the total garden. _____
6. Solve the quadratic equation by writing in standard form and then using the Zero-Product Property. _____
7. What is the width of the border? _____

Look Back and Check

8. Check the reasonableness of your answer by substituting your width value for x . Using the picture of the garden as a reference, calculate the area of the border and verify that it is 276 ft^2 .

Solve Another Problem

9. Suppose instead of the flower border, you decide to expand the garden shown above by laying a brick path. The path will be of the same width around the entire garden. The bricks you bought will fill an area of 500 ft^2 . How wide should the path be?
