UNIT 3 • MODELING AND ANALYZING QUADRATIC FUNCTIONS
Lesson 1: Creating and Solving Quadratic Equations in One Variable

Lesson 3.1.3: Factoring Expressions with $a = 1$

Warm-Up 3.1.3

Erica and her dad want to plant a rectangular vegetable garden in their backyard, and are trying to determine the best size. They need to know how much area will be taken up by the different options they have in mind for the length and width. Use the formula for the area of a rectangle, $A = lw$, to complete the following problems.

1. If the length is $(x + 5)$ feet and the width is $(x + 3)$ feet, what expression represents the area of the garden?

2. If the length is $(x + 4)$ feet and the width is $(x - 4)$ feet, what expression represents the area of the garden?

3. If they want the area to be $(x^2 + 7x)$ square feet with a length of x feet, what does the width need to be?