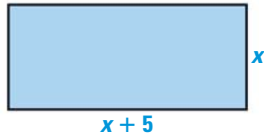
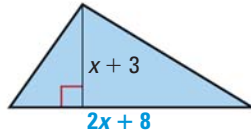


 **GEOMETRY** Find the value of x .

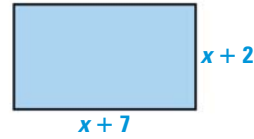
59. Area of rectangle = 36



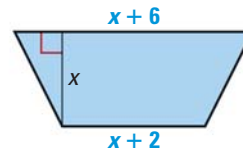
61. Area of triangle = 42




60. Area of rectangle = 84



62. Area of trapezoid = 32



63.  **TAKS REASONING** Write a quadratic function with zeros that are equidistant from 10 on a number line.

64. **CHALLENGE** Is there a formula for factoring the *sum* of two squares? You will investigate this question in parts (a) and (b).

- Consider the sum of two squares $x^2 + 16$. If this sum can be factored, then there are integers m and n such that $x^2 + 16 = (x + m)(x + n)$. Write two equations that m and n must satisfy.
- Show that there are no integers m and n that satisfy both equations you wrote in part (a). What can you conclude?

PROBLEM SOLVING


EXAMPLE 4

on p. 254
for Exs. 65–67

65. **SKATE PARK** A city's skate park is a rectangle 100 feet long by 50 feet wide. The city wants to triple the area of the skate park by adding the same distance x to the length and the width. Write and solve an equation to find the value of x . What are the new dimensions of the skate park?

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66. **ZOO** A rectangular enclosure at a zoo is 35 feet long by 18 feet wide. The zoo wants to double the area of the enclosure by adding the same distance x to the length and the width. Write and solve an equation to find the value of x . What are the new dimensions of the enclosure?

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67. **MULTI-STEP PROBLEM** A museum has a café with a rectangular patio. The museum wants to add 464 square feet to the area of the patio by expanding the existing patio as shown.

- Find the area of the existing patio.
- Write a verbal model and an equation that you can use to find the value of x .
- Solve your equation. By what distance x should the length and the width of the patio be expanded?

