9-5 Additional Practice

Completing the Square

Find the value of c that makes each expression a perfect square trinomial.

1. $x^2 + 18x + c$

2. $x^2 - 32x + c$

3. $x^2 + 13x + c$

Solve each equation by completing the square.

4. $x^2 + 8x + 5 = 0$

5. $x^2 - 4x - 14 = 0$

6. $x^2 + 5x - 9 = 0$

7. $4x^2 - 16x = -8$

8. $4x^2 + 8x = 32$

9. $x^2 - 8x = 9$

Write each function in vertex form and identify the vertex.

10. $f(x) = x^2 - 16x + 3$

11. $f(x) = 4x^2 + 24x - 7$

12. $f(x) = -2x^2 - 8x + 9$

13. Is $x^2 + 2bx - b^2$ a perfect square trinomial? Explain. If not, what is an expression for the last term that will make it a perfect square trinomial?

14. A rectangle with sides measuring x in. and $4x - 1$ in. has an area of 663 in.^{2}. What are the dimensions of the rectangle?