

Completing the Square 6-3

Completing the square –

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

1. $x^2 + 16x + c$

2. $x^2 - 8x + c$

Solve the following equations using the complete the square method.

3. $x^2 + 6x = 16$

STEP 1: Put the variable terms on one side of the equation and the constants on the other side. Make sure the coefficient of the squared term (a) is 1.

STEP 2: Find the value that will complete the square by taking half of the linear term coefficient (b) and squaring it.

STEP 3: Add that value to each side.

STEP 4: Factor the perfect square.

STEP 5: Solve by taking the square root of both sides.

4. $a^2 + 11a + 24 = 0$

5. $2x^2 - 11x + 12 = 0$

6. $6x^2 - 7x - 5 = 0$

7. $\frac{1}{2}x^2 - 4x + 8 = 0$

8. $4x^2 - 5x - 21 = 0$