

Completing the Square: Worksheet

Solve the following problems on completing the square. Show all your working where possible.

1. Rewrite the quadratic expression $x^2 + 8x + 7$ in completed square form.
2. Express $x^2 - 10x + 16$ in the form $(x - a)^2 + b$.
3. Write $x^2 + 12x$ in completed square form.
4. Express $x^2 + 2x + 1$ in the form $(x + a)^2 + b$.
5. Write $x^2 - 6x + 2$ in completed square form.
6. Solve $x^2 - 8x + 7 = 0$ by completing the square.

Maths with Melissa

Answer Key

$$1. \ x^2 + 8x + 7 = (x + 4)^2 - 9$$

$$2. \ x^2 - 10x + 16 = (x - 5)^2 - 9$$

$$3. \ x^2 + 12x = (x + 6)^2 - 36$$

$$4. \ x^2 + 2x + 1 = (x + 1)^2 + 0$$

$$5. \ x^2 - 6x + 2 = (x - 3)^2 - 7$$

$$6. \ x^2 - 8x + 7 = 0$$

$$x^2 - 8x = -7$$

$$x^2 - 8x + 16$$

$$9 (x - 4)^2$$

$$9 x - 4 = \pm 3$$

$$x = 4 \pm 3$$

$$x = 7, x = 1.$$