

Maths

Solve Quadratic Equations by Completing the Square

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Please note some slides do have colour font on them



Solve quadratic equations by completing the square

1. Solve the equations without expanding the brackets.

a) $(x + 2)^2 - 9 = 0$

b) $(x + 7)^2 - 1 = 0$

c) $(x - 15)^2 + 4 = 40$

2. Solve the equations without expanding the brackets. Give your answers in exact form.

a) $(x + 5)^2 - 26 = 0$

b) $(x + 10)^2 - 29 = 0$

c) $(x - 3)^2 + 2 = 15$



Solve quadratic equations by completing the square

3. Solve by completing the square.

Give your answers in exact form.

a) $x^2 - 18x + 91 = 0$

b) $x^2 + 32x + 437 = 0$

c) $x^2 - 38x - 150 = 0$

4. Solve by completing the square.

Give your answers in exact form.

a) $x^2 - 8x - 24 = 0$

b) $x^2 + 50x + 125 = 0$

c) $x^2 - \frac{2}{3}x - \frac{5}{7} = 0$



Answers



Solve quadratic equations by completing the square

1. Solve the equations without expanding the brackets.

a) $(x + 2)^2 - 9 = 0$ $x = -5, x = 1$

b) $(x + 7)^2 - 1 = 0$ $x = -8, x = -6$

c) $(x - 15)^2 + 4 = 40$ $x = 21, x = 9$

2. Solve the equations without expanding the brackets. Give your answers in exact form.

a) $(x + 5)^2 - 26 = 0$ $x = -5 \pm \sqrt{26}$

b) $(x + 10)^2 - 29 = 0$ $x = -10 \pm \sqrt{29}$

c) $(x - 3)^2 + 2 = 15$ $x = 3 \pm \sqrt{13}$



Solve quadratic equations by completing the square

3. Solve by completing the square.

Give your answers in exact form.

a) $x^2 - 18x + 91 = 0$ $x = 9 \pm \sqrt{10}$

b) $x^2 + 32x + 437 = 0$ $x = -16 \pm \sqrt{181}$

c) $x^2 - 38x - 150 = 0$ $x = 19 \pm \sqrt{511}$

4. Solve by completing the square.

Give your answers in exact form.

a) $x^2 - 8x - 24 = 0$ $x = 4 \pm 2\sqrt{10}$

b) $x^2 + 50x + 125 = 0$ $x = -25 \pm 10\sqrt{5}$

c) $x^2 - \frac{2}{3}x - \frac{5}{7} = 0$ $x = \frac{1}{3} \pm \frac{2\sqrt{91}}{21}$

