

a Write $x^2 - 10x + 18$ in the form $(x + a)^2 + b$ $(x - 5)^2 - 7$ completed square: a minus inside	b Solve $x^2 + 2x - 7 = 0$. Simplify your answers. $x = -1 \pm 2\sqrt{2}$ a surd that simplifies	c Solve $2x^2 + 3x - 4 = 0$. Give exact answers. $x = \frac{-3 \pm \sqrt{41}}{4}$ the formula when a is 2	d Solve $\frac{1}{x} + \frac{1}{x+2} = \frac{3}{4}$ $x = 2 \text{ or } x = -\frac{4}{3}$ add two algebraic fractions first
e Solve $x^4 - 13x^2 + 36 = 0$ $x = \pm 2 \text{ or } x = \pm 3$ a quadratic in x^2 : four roots	f Solve $x^2 - 2\sqrt{3}x - 1 = 0$. Give exact answers. $x = \sqrt{3} \pm 2$ a surd coefficient	g Solve $3x^2 - 6x - 1 = 0$ by completing the square $x = \frac{3 \pm 2\sqrt{3}}{3}$ complete the square when a is 3	h $x = 2$ is one solution of $x^2 + bx - 6 = 0$. Find the other solution. $x = -3$ one root given: find the other
i Solve $\sqrt{(x + 7)} = x + 1$ $x = 2 \text{ only}$ square both sides: check each root	j $x^2 + 6x + k = 0$ has only one solution. Find k . $k = 9$ one solution: $b^2 - 4ac = 0$	k $x^2 + kx + 9 = 0$ has no solutions. Find the possible values of k . $-6 < k < 6$ no solutions: an inequality in k	l Find k so that $x^2 + (k - 2)x + k + 1 = 0$ has only one solution $k = 0 \text{ or } k = 8$ a quadratic in k from $b^2 - 4ac$

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