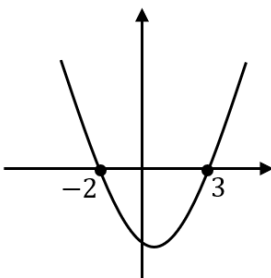
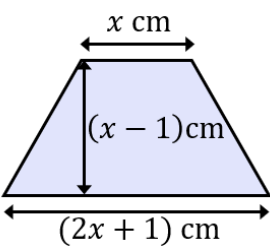
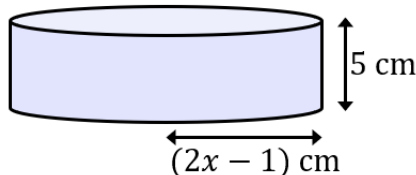
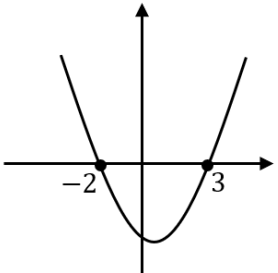
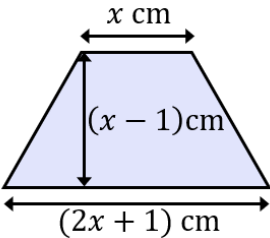
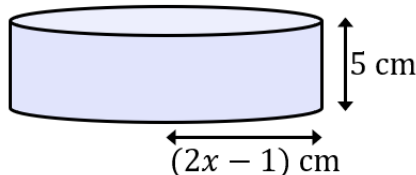


Quadratic Equations and Inequalities

(a)	(b)	(c)	(d)
Solve by factorising $x^2 + 18x + 65 = 0$	Solve $w^2 - 9w = 0$	Solve $2d + 15 = d^2$	Solve $3y^2 = 48$
(e)	(f)	(g)	(h)
Solve $7a^2 + 12a - 4 = 0$	Solve $y^2 + 6y - 3 = 0$ by completing the square, giving your answers in surd form.	Solve using quadratic formula $4x^2 + 5x - 2 = 0$ Give your answers to 2 decimal places.	Solve $11x - 3 = 5x^2$ Give your answers correct to 3 significant figures.
(i)	(j)	(k)	(l)
Use the graph of $y = x^2 - x - 6$ to solve the inequality $x^2 - x - 6 < 0$ 	Solve the inequality $2(3x^2 - 5) \geq 11x$	The area of the trapezium shown is 10 cm^2 . By forming and solving a quadratic equation, find the value of x . 	The volume of the cylinder is $100\pi \text{ cm}^3$. Find the value of x , giving your answer to 2 decimal places. 

Quadratic Equations and Inequalities

<p>(a)</p> <p>Solve by factorising $x^2 + 18x + 65 = 0$</p> <p style="color: red;">$x = -13, x = -5$</p>	<p>(b)</p> <p>Solve $w^2 - 9w = 0$</p> <p style="color: red;">$w = 0, w = 9$</p>	<p>(c)</p> <p>Solve $2d + 15 = d^2$</p> <p style="color: red;">$d = 5, d = -3$</p>	<p>(d)</p> <p>Solve $3y^2 = 48$</p> <p style="color: red;">$y = -4, y = 4$</p>
<p>(e)</p> <p>Solve $7a^2 + 12a - 4 = 0$</p> <p style="color: red;">$a = \frac{2}{7}, a = -2$</p>	<p>(f)</p> <p>Solve $y^2 + 6y - 3 = 0$ by completing the square, giving your answers in surd form.</p> <p style="color: red;">$(y + 3)^2 - 12 = 0$ $y = -3 \pm 2\sqrt{3}$</p>	<p>(g)</p> <p>Solve using quadratic formula $4x^2 + 5x - 2 = 0$ Give your answers to 2 decimal places.</p> <p style="color: red;">$x = 0.32, -1.57$</p>	<p>(h)</p> <p>Solve $11x - 3 = 5x^2$ Give your answers correct to 3 significant figures.</p> <p style="color: red;">$x = 1.88, x = 0.319$</p>
<p>(i)</p> <p>Use the graph of $y = x^2 - x - 6$ to solve the inequality $x^2 - x - 6 < 0$</p>  <p style="color: red;">$-2 < x < 3$</p>	<p>(j)</p> <p>Solve the inequality $2(3x^2 - 5) \geq 11x$</p> <p style="color: red;">$6x^2 - 11x - 10 < 0$ $(3x + 2)(2x - 5) < 0$</p> <p style="color: red;">$x \leq -\frac{2}{3}, x \geq \frac{5}{2}$</p>	<p>(k)</p> <p>The area of the trapezium shown is 10 cm^2. By forming and solving a quadratic equation, find the value of x.</p>  <p style="color: red;">$(3x + 7)(x - 3) = 0$ $x = 3 \text{ cm}$</p>	<p>(l)</p> <p>The volume of the cylinder is $100\pi \text{ cm}^3$. Find the value of x, giving your answer to 2 decimal places.</p>  <p style="color: red;">$4x^2 - 4x - 19 = 0$ $x = 2.74$</p>