



## **QUADRATIC EQUATIONS**

## THE QUADRATIC FORMULA

A1	A2	A3	A4
Solve	Solve	Solve	Solve
$3x^2 + 8x + 2 = 0$ Give your answers correct to 3 significant figures.	$2x^2 + 5x - 4 = 0$ Give your answers correct to 3 significant figures.	$4x^2 - 7x + 1 = 0$ Give your answers correct to 3 significant figures.	$2x^2 - 4x - 9 = 0$ Give your answers correct to 3 significant figures.
B1	B2	B3	B4
Solve	Solve	Solve	Solve
$5x^2 + 8x - 1 = 4$	$5x^2 + 7x + 3 = x^2$	$x^2 - 4x + 3 = 4x + 8$	$5+9x+4x^2 = 4$
Give your answers correct to	Give your answers correct to	Give your answers correct to	Give your answers correct to
3 significant figures.	3 significant figures.	3 significant figures.	3 significant figures.
C1	C2	C3	C4
Calculate the discriminant and state	Calculate the discriminant and state	Calculate the discriminant and state	Calculate the discriminant and state
the number of solutions to:	the number of solutions to:	the number of solutions to:	the number of solutions to:
$x^2 + 4x + 2$	$2x^2 + 4x + 5$	$3x^2 - 7x - 2$	$x^2 - 6x + 9$
D1 Write down an equation, which leads to the calculation $x = \frac{-3 \pm \sqrt{9 + 12}}{2}$	D2 Write down an equation, which leads to the calculation $x = \frac{11 \pm \sqrt{121 - 40}}{4}$	D3 Write down an equation, which leads to the calculation $x = \frac{-4 \pm \sqrt{16 + 20}}{10}$	D4 Write down an equation, which leads to: $x = \frac{-8 \pm \sqrt{64 - 48}}{6}$

Ref: G243.2R1





## QUADRATIC EQUATIONS THE QUADRATIC FORMULA

Ref: G243.2R1

A1	Solve	A2	Solve	A3	Solve	A4 Solve
	$3x^2 + 8x + 2 = 0$		$2x^2 + 5x - 4 = 0$		$4x^2 - 7x + 1 = 0$	$2x^2 - 4x - 9 = 0$
	$x = \frac{-(8) \pm \sqrt{(8)^2 - 4(3)(2)}}{2(3)}$ = -0.279 or -3.39		$x = \frac{-(5) \pm \sqrt{(5)^2 - 4(2)(-4)}}{2(2)}$ = 0.637 or - 3.14	×	$= \frac{-(-7) \pm \sqrt{(-7)^2 - 4(4)(1)}}{2(4)}$ = 1.59 or 0.157	$x = \frac{-(-4) \pm \sqrt{(-4)^2 - 4(2)(-9)}}{2(2)}$ = 3.35 or - 1.35
<b>B1</b>	Solve	<b>B2</b>	Solve	<b>B3</b>	Solve	<b>B4</b> Solve
	$5x^2 + 8x - 1 = 4$		$5x^2 + 7x + 3 = x^2$		$x^2 - 4x + 3 = 4x + 8$	$5+9x+4x^2=4$
	$5x^2 + 8x - 5 = 0$		$4x^2 + 7x + 3 = 0$		$x^2 - 8x - 5 = 0$	$4x^2 + 9x + 1 = 0$
	x = 0.481 or $x = -2.08$		x = -1 or $x = -0.75$		x = 8.58 or $x = -0.583$	x = -2.13 or $x = -0.117$
<b>C1</b>	_	<b>C2</b>		<b>C3</b>		C4
	$x^2 + 4x + 2$		$2x^2 + 4x + 5$		$3x^2 - 7x - 2$	$x^2 - 6x + 9$
	$b^2 - 4ac = 16 - 8$		$b^2 - 4ac = 16 - 40$		$b^2 - 4ac = 49 - (-24)$	$b^2 - 4ac = 36 - 36$
	= 8		= -24		= 73	= 0
	(+ve) .: two solutions		(-ve) no solutions		(+ve) ∴ two solutions	(zero) ∴ one solution
D1	(+ve) ∴ two solutions $x^2 + 3x - 3 = 0$	D2	(-ve) $\therefore$ no solutions $2x^2 - 11x + 5 = 0$	D3	(+ve) ∴ two solutions $5x^2 + 4x - 1 = 0$	(zero) $\therefore$ one solution D4 $3x^2 + 8x + 4 = 0$
D1 Writ	(+Ve) ∴ two solutions $\frac{x^2 + 3x - 3 = 0}{x^2 + 3x - 3 = 0}$ the down an equation, which leads	D2 Wri	(-Ve) $\therefore$ no solutions $\frac{2x^2 - 11x + 5 = 0}{12x + 5 = 0}$ te down an equation, which leads	D3 Write	(+ve) ∴ two solutions $5x^2 + 4x - 1 = 0$ e down an equation, which leads	(zero) $\therefore$ one solution <b>D4</b> $3x^2 + 8x + 4 = 0$ Write down an equation, which
D1 Writ to th	(+Ve) : two solutions $x^{2} + 3x - 3 = 0$ The down an equation, which leads a calculation $3$	D2 Wri to th	(-ve) : no solutions $2x^2 - 11x + 5 = 0$ te down an equation, which leads he calculation	D3 Write to the	(+ve) ∴ two solutions $5x^2 + 4x - 1 = 0$ e down an equation, which leads a calculation	(zero) $\therefore$ one solution <b>D4</b> $3x^2 + 8x + 4 = 0$ Write down an equation, which leads to:
D1 Writ to th	(+Ve) : two solutions $x^{2} + 3x - 3 = 0$ The down an equation, which leads the calculation $3$ $4\alpha c$ $x^{2} + 3x - 3 = 0$ The down an equation, which leads $x = \frac{-3 \pm \sqrt{9 + 12}}{4\alpha c}$	D2 Wri to th	(-ve) : no solutions $2x^{2} - 11x + 5 = 0$ te down an equation, which leads the calculation $x = \frac{11 \pm \sqrt{121 - 40}}{121 - 40}$	<b>D3</b> Write to the	(+ve) ∴ two solutions $5x^2 + 4x - 1 = 0$ e down an equation, which leads e calculation $x = \frac{-4 \pm \sqrt{16 + 20}}{4 + 20}$	(zero) $\therefore$ one solution D4 $3x^2 + 8x + 4 = 0$ Write down an equation, which leads to: $x = \frac{-8 \pm \sqrt{64 - 48}}{4}$

© 2018 Maths4Everyone.com

Worksheets, Videos, Interactive Quizzes and Exam Solutions