

$$x + y$$

$$x^2 - 4x + 3 = 0$$
$$(x-1)(x-3) = 0$$

$$a^m + a^n = a^{m+n}$$

ALGEBRA

MATHS

LEVEL 2

Study Checklist

If you've picked up this checklist, congrats! You've begun the first step in a system of resources designed to help you through the Algebra external. To make the most of this, we suggest you sit down, grab a pen, and mark any points that you're feeling a little unsure of. Then, create a subject audit using our template, or refer to the page numbers to find the section in our walkthrough guide to help you out!

ALGEBRA BASICS

- | | | | |
|--|-------|---|-------|
| <input type="checkbox"/> I can add values of x | [TBC] | <input type="checkbox"/> I can multiply the numbers in front of x | [TBC] |
| <input type="checkbox"/> I can remember that $1x$ is the same as x | [TBC] | <input type="checkbox"/> I can divide values x by cancelling out | [TBC] |
| <input type="checkbox"/> I can multiply values of x | [TBC] | <input type="checkbox"/> I can rearrange and solve an equation | [TBC] |

EXPANDING AND FACTORISING

- | | | | |
|--|-------|---|-------|
| <input type="checkbox"/> I can explain the difference between expanded and factorised form | [TBC] | <input type="checkbox"/> I can isolate x by factorising | [TBC] |
| <input type="checkbox"/> I can factorise by finding the common factor | [TBC] | <input type="checkbox"/> I can factorise a quadratic | [TBC] |
| <input type="checkbox"/> I can rearrange to make x the subject of an equation | [TBC] | <input type="checkbox"/> I can factorise a quadratic with negative signs | [TBC] |
| <input type="checkbox"/> I can gather like terms | [TBC] | <input type="checkbox"/> I can factorise a quadratic with a coefficient bigger than 1 in two ways | [TBC] |
| | | <input type="checkbox"/> I can expand cubic equations | [TBC] |

ALGEBRAIC FRACTIONS

- | | | | |
|---|-------|--|-------|
| <input type="checkbox"/> I can simplify fractions by cancelling out | [TBC] | <input type="checkbox"/> I can simplify fractions where x has a power greater than 1 | [TBC] |
| <input type="checkbox"/> I can identify when a fraction can or can't be cancelled out | [TBC] | <input type="checkbox"/> I can add fractions | [TBC] |
| <input type="checkbox"/> I can divide fractions by other fractions | [TBC] | <input type="checkbox"/> I can subtract fractions | [TBC] |
| <input type="checkbox"/> I can multiply fractions | [TBC] | <input type="checkbox"/> I can cross-multiply two fractions | [TBC] |

EXPONENTS AND LOGARITHMS

- I can identify the parts of an exponential equation [TBC]
- I can explain what exponential equations model [TBC]
- I can convert exponential equations to log equations [TBC]
- I can identify the parts of a log equation [TBC]
- I can remember the rule when switching from exponential to log equations [TBC]
- I can add logs [TBC]
- I can subtract logs [TBC]
- I can use powers with logs [TBC]
- I can simplify into one term [TBC]
- I can take the log of both sides to solve a problem where the power is x [TBC]
- I can solve log equations using my calculator [TBC]
- I can solve log equations with complicated powers/bases [TBC]

QUADRATICS AND POLYNOMIALS

- I can solve a quadratic by making it equal zero and finding x [TBC]
- I can solve a quadratic by completing the square [TBC]
- I can solve a quadratic using the quadratic formula [TBC]
- I can explain what roots are and how an equation can have one, two, or no roots [TBC]
- I can use the discriminant to find the nature of roots [TBC]
- I can find the roots of an equation that has an unknown, like k [TBC]
- I can find a range of values for when an equation has two, one, or no roots [TBC]
- I can solve polynomials in factorised form [TBC]

$$\pi = 3.14\dots$$

