

a Simplify $\frac{10a^3b}{15ab^2}$ $\frac{2a^2}{3b}$ cancelling powers of two letters	b Simplify $\frac{2x+6}{x^2+3x}$ $\frac{2}{x}$ a common factor top and bottom	c Simplify $\frac{x^2-16}{x^2+x-12}$ $\frac{x-4}{x-3}$ two quadratics to factorise	d Simplify $\frac{x+1}{4} \times \frac{8}{(x+1)^2}$ $\frac{2}{x+1}$ multiplying: cancel a bracket
e Simplify $\frac{3x}{5} \div \frac{9x^2}{10}$ $\frac{2}{3x}$ dividing algebraic fractions	f Simplify $\frac{x^2+2x}{3} \div \frac{x+2}{6}$ $2x$ factorise, then divide	g Write $\frac{3}{x} + \frac{2}{x^2}$ as a single fraction $\frac{3x+2}{x^2}$ a power of the letter underneath	h Write $\frac{x}{x+2} - 1$ as a single fraction $\frac{-2}{x+2}$ a whole number as a fraction
i Write $\frac{5}{x-1} - \frac{2}{x+3}$ as a single fraction $\frac{3x+17}{(x-1)(x+3)}$ subtracting: bracket denominators	j Solve $\frac{x+2}{3} - \frac{x-1}{4} = 2$ $x = 13$ an equation with fractions	k Solve $\frac{5}{x} = \frac{2}{x-3}$ $x = 5$ the letter in a denominator	l Solve $\frac{3}{x+1} - \frac{1}{x-1} = 0$ $x = 2$ two bracket denominators

The Maths Habit

a Simplify $\frac{10a^3b}{15ab^2}$ $\frac{2a^2}{3b}$ cancelling powers of two letters	b Simplify $\frac{2x+6}{x^2+3x}$ $\frac{2}{x}$ a common factor top and bottom	c Simplify $\frac{x^2-16}{x^2+x-12}$ $\frac{x-4}{x-3}$ two quadratics to factorise	d Simplify $\frac{x+1}{4} \times \frac{8}{(x+1)^2}$ $\frac{2}{x+1}$ multiplying: cancel a bracket
e Simplify $\frac{3x}{5} \div \frac{9x^2}{10}$ $\frac{2}{3x}$ dividing algebraic fractions	f Simplify $\frac{x^2+2x}{3} \div \frac{x+2}{6}$ $2x$ factorise, then divide	g Write $\frac{3}{x} + \frac{2}{x^2}$ as a single fraction $\frac{3x+2}{x^2}$ a power of the letter underneath	h Write $\frac{x}{x+2} - 1$ as a single fraction $\frac{-2}{x+2}$ a whole number as a fraction
i Write $\frac{5}{x-1} - \frac{2}{x+3}$ as a single fraction $\frac{3x+17}{(x-1)(x+3)}$ subtracting: bracket denominators	j Solve $\frac{x+2}{3} - \frac{x-1}{4} = 2$ $x = 13$ an equation with fractions	k Solve $\frac{5}{x} = \frac{2}{x-3}$ $x = 5$ the letter in a denominator	l Solve $\frac{3}{x+1} - \frac{1}{x-1} = 0$ $x = 2$ two bracket denominators

The Maths Habit