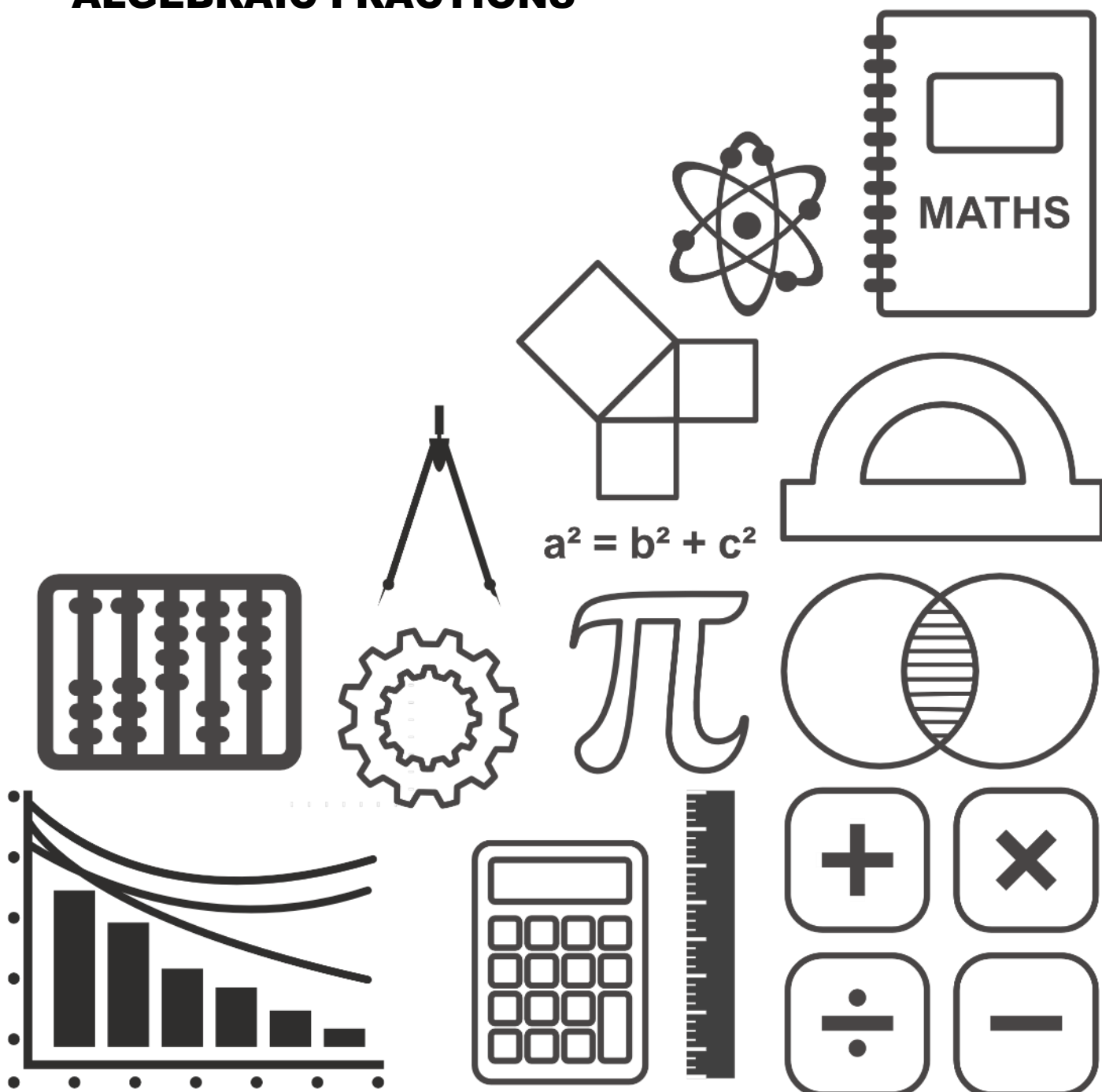


# MATHS DIY

## GCSE TOPIC BOOKLET ALGEBRAIC FRACTIONS



1. Express the following as a single fraction in its simplest form.

$$\frac{5}{3x - 1} - \frac{4}{2x + 3}$$

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2. Solve the following equation.

$$\frac{2}{2x + 3} + \frac{1}{x + 2} = 3$$

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3. Solve the following equation.

$$\frac{4x - 5}{2} + \frac{7x - 10}{5} = 4$$

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4. Express the following as a single fraction in its simplest form.

$$\frac{3x}{3x + 2} - \frac{2x}{2x + 7}$$

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5. Prove

$$\frac{2x}{7} + \frac{x+3}{4} + \frac{4x+1}{3} \equiv \frac{157x+91}{84}$$

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6. Simplify

$$\frac{a^2 + 4ab + 4b^2}{5a + 10b}$$

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7. Express the following as a single fraction in its simplest form.

$$\frac{7x}{2x + 3} + \frac{2}{3x - 2}$$

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8. Solve the following equation.

$$\frac{5x - 1}{2} - x = \frac{1}{2}$$

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9. Express the following as a single fraction in its simplest terms.

$$\frac{2x - 3}{3} - \frac{x + 5}{4}$$

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10. Prove that

$$\frac{2x + 3}{4} - \frac{3x - 2}{3} + \frac{1}{6} \equiv \frac{19 - 6x}{12}$$

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11. Simplify

$$\frac{2x^2 + 5x - 7}{10x + 35}$$

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12. Solve

$$\frac{8x - 5}{3} + \frac{4x + 5}{4} = \frac{149}{12}$$

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13. Express the following as a single fraction, simplifying your answer.

$$\frac{a - b}{a + b} - \frac{a + b}{a + 2b}$$

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14. Simplify

$$\frac{n + 1}{n} - \frac{n}{n + 1}$$

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15. Express the following as a single fraction, simplifying your answer.

$$\frac{5}{y+4} - \frac{3}{2y-1}$$

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16. Simplify

$$\frac{9x^2 - 25}{6x + 10}$$

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