

## Solutions

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Marking: **M1** a correct method, **A1** the correct answer.

Each answer shows the steps, then the **result**.

### 2.1

- numerator is a difference of two squares:  $x^2 - 25 = (x - 5)(x + 5)$
- denominator factorises:  $x^2 - 2x - 15 = (x - 5)(x + 3)$

$$= \frac{\mathbf{x + 5}}{\mathbf{x + 3}}$$

### 2.2

- common denominator 15:  $\frac{5x}{15} + \frac{6x}{15}$

$$= \frac{\mathbf{11x}}{\mathbf{15}}$$

### 2.3

- divide the numbers by 3 and cancel one  $x$  and one  $y$

$$= \frac{\mathbf{2x}}{\mathbf{3y^2}}$$

### 3.1

- common denominator  $(x - 2)(x + 1)$
- $\frac{3(x + 1) + 2(x - 2)}{(x - 2)(x + 1)}$
- expand the numerator:  $3x + 3 + 2x - 4$

$$= \frac{\mathbf{5x - 1}}{\mathbf{(x - 2)(x + 1)}}$$

### 3.2

- numerator:  $2x^2 + 5x - 3 = (2x - 1)(x + 3)$
- denominator is a difference of two squares:  $4x^2 - 1 = (2x - 1)(2x + 1)$

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