

Marks are indicated in brackets after each question number

2014 Paper 2 Question 9, (3)

$$\begin{aligned}\frac{7}{x+5} - \frac{3}{x} &= \frac{7x}{x(x+5)} - \frac{3(x+5)}{x(x+5)} \\ &= \frac{7x - 3(x+5)}{x(x+5)} \\ &= \frac{7x - 3x - 15}{x(x+5)} \\ &= \frac{4x - 15}{x(x+5)}\end{aligned}$$

2015 Paper 1 Question 12, (3)

$$\begin{aligned}\frac{x^2 - 4x}{x^2 + x - 20} \\ &= \frac{x(x-4)}{(x+5)(x-4)} \\ &= \frac{x}{x+5}\end{aligned}$$

2016 Paper 2 Question 13, (3)

$$\begin{aligned}\frac{3}{x-2} + \frac{5}{x+1} \\ &= \frac{3(x+1)}{(x-2)(x+1)} + \frac{5(x-2)}{(x-2)(x+1)}\end{aligned}$$

$$= \frac{3(x+1) + 5(x-2)}{(x-2)(x+1)}$$

$$= \frac{8x-7}{(x-2)(x+1)}$$

2017 Paper 1 Question 11, (2)

$$\frac{3}{a^2} - \frac{2}{a} = \frac{3}{a^2} - \frac{2a}{a^2}$$

$$= \frac{3-2a}{a^2}$$

2017 Paper 2 Question 9, (1) (3)

a) $4x^2 - 25 = (2x)^2 - 5^2$

$$= (2x-5)(2x+5)$$

b) $\frac{4x^2 - 25}{2x^2 - x - 10} = \frac{(2x-5)(2x+5)}{(2x-5)(x+2)}$

$$= \frac{2x+5}{x+2}$$

2018 Paper 2 Question 15, (3)

$$\frac{n}{n^2-4} \div \frac{3}{n-2}$$

$$= \frac{n}{n^2-4} \times \frac{n-2}{3}$$

$$= \frac{n(n-2)}{3(n^2-4)}$$

$$= \frac{n(n-2)}{3(n-2)(n+2)} = \frac{n}{3(n+2)}$$

2019 Paper 2 Question 15, (3)

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

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

$$= \frac{4x + 20 - 3x + 6}{(x-2)(x+5)}$$

$$= \frac{x + 26}{(x-2)(x+5)}$$