



Maths
Junior Certificate
Higher Level

Past Exam Questions on
Fractions in Algebra

Q3 Part (b) 2011 Paper 1

(b) (i) ✍ Divide $3x^2 + 5x - 28$ by $x + 4$.

(ii) ✍ Solve the equation $\frac{4x+2}{5} - \frac{6-x}{3} = -5$.

Q6 Part (a) & (b) 2011 Paper 1

6. (a) ✍ When $a = \frac{1}{4}$, find the value of $\frac{a+5}{3} - \frac{a+4}{2}$.

(b) (i) ✍ Express in its simplest form:

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

(ii) ✍ Hence, or otherwise, solve the equation:

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

giving your answers correct to one decimal place.

Q3 Part (c) 2010 Paper 1

- (c) (i) ✍ Express in its simplest form:

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

- (ii) ✍ Hence, or otherwise, solve the equation:

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

giving your answers in the form $a \pm b\sqrt{b}$, where $a, b \in \mathbf{N}$.

Q6 Part (a) 2009 Paper 1

6. (a) ✍ Express in its simplest form:

$$\frac{x+7}{5} + \frac{3-x}{4}.$$

Q6 Part (c) 2009 Paper 1

- (c) (i) ✍ Solve $\frac{6}{x} + \frac{6}{x+2} = \frac{5}{2}$, $x \in \mathbf{R}$.

- (ii) ✍ Hence, or otherwise, find the two values of $t \in \mathbf{R}$, for which

$$\frac{6}{2t-1} + \frac{6}{2t+1} = \frac{5}{2}.$$

Q3 Part (c) 2008 Paper 1

- (c) (i) ✍ Express in its simplest form:

$$\frac{1}{2x-3} - \frac{1}{x+3}.$$

- (ii) ✍ Hence, or otherwise, solve the equation:

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

giving your answers correct to two decimal places.

Q5 Part (b) 2008 Paper 1

- (b) (i) ✍ When $x = \frac{1}{2}$, find the value of $\frac{3}{x+2} - \frac{1}{2x+4}$.

- (ii) ✍ Divide $6x^3 - 13x^2 + 27x - 14$ by $3x - 2$.

Q3 Part (b) 2007 Paper 1

- (b) (i) ✍ Simplify

$$\frac{2x^2 + 4x - 30}{x - 3}.$$

Q4 Part (a) 2007 Paper 1

4. (a) ✍ When $x = \frac{1}{3}$, find the value of $\frac{3}{x+1} + \frac{4}{x+5}$.

Q3 Part (c) 2006 Paper 1

- (c) (i) ✍ Express in its simplest form:

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

- (ii) ✍ Hence, or otherwise, solve the equation:

$$\frac{1}{2x-3} - \frac{1}{2x+3} = \frac{6}{7}, \quad x \in \mathbf{Z}.$$

Q4 part (c) 2005 Paper 1

- (c) (i) ✍ Express in its simplest form:

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

- (ii) ✍ Hence, or otherwise, solve the equation:

$$\frac{1}{x-1} + \frac{1}{x+1} = 3.$$

Express your answer in the form $a \pm b\sqrt{10}$, where $a, b \in \mathbf{Q}$.