# Bridging the Gap

## GCSE to A – Level Transition

Reasoning

Problem Solving
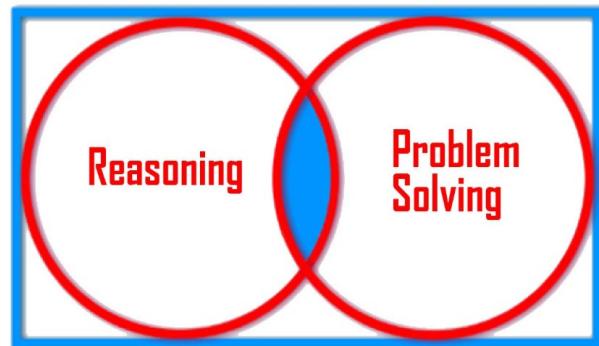
**fluidmaths.co.uk**

## Algebraic Fractions
## Answers

**1** Simplify the following fractions

a) $\frac{2x}{5} + \frac{3x}{7}$

b) $\frac{2x}{7} - \frac{9x}{11}$

c) $\frac{x}{3} + \frac{3x}{5} - \frac{2x}{7}$

d) $\frac{2x}{5} + \left(\frac{3}{4} \times \frac{x}{5}\right) - \frac{7x}{8}$

e) $\frac{x}{3} - \frac{x}{4} \div \frac{x}{3} + \frac{1}{5}$

**Answers:**

a) $\frac{29x}{35}$

b) $-\frac{41x}{77}$

c) $\frac{68x}{105}$

d) $-\frac{13x}{40}$

e) $\frac{20x-33}{60}$

**2** Simplify the following fractions

a) $\frac{x+5}{3} + \frac{x+3}{4}$

b) $\frac{11+3x}{4} + \frac{x-5}{3}$

c) $\frac{2x-5}{7} - \frac{x+5}{4}$

d) $\frac{7x+1}{3} - \frac{6-5x}{2}$

**Answers:**

a) $\frac{7x+29}{12}$

b) $\frac{13x+13}{12}$

c) $\frac{x-55}{28}$

d) $\frac{29x-16}{6}$

**3**

a) Simplify $\frac{6x^2-x-15}{9x^2-25}$ fully

b) Write $\frac{2x^2+7x+6}{x+2}$ in the form $ax+b$

c) Write $\frac{x^2-1}{5x^2+x-4}$ in the form $\frac{ax+b}{cx+d}$

d) Simplify the expressions $\frac{49-81x^2}{18x^2+23x+7}$

**Answers:**

a) $\frac{2x+3}{3x+5}$

b) $2x+3$

c) $\frac{x-1}{5x-4}$

d) $\frac{7-9x}{1+2x}$

**4** Solve the following equations

a) $\frac{x}{5}+\frac{x}{6}=\frac{1}{10}$

b) $\frac{2x}{3}-\frac{2x}{5}=\frac{7}{8}$

c) $-6=\frac{3x}{4}+\frac{x}{5}$

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

**Answers:**

a) $x=\frac{3}{11}$

b) $x=\frac{105}{32}=3\frac{9}{32}$

c) $x=-\frac{120}{19}=-6\frac{6}{19}$

d) $x=5$

**5**

a) Show that $\frac{2x^2-7x+6}{4x^2-4x-3}$ can be written in the form $\frac{ax+b}{cx+d}$

b) Hence or otherwise solve the equation $\frac{2x^2-7x+6}{4x^2-4x-3} = -4$

**Answers:**

a) $\frac{x-2}{2x+1}$

b) $x = -\frac{2}{9}$