

**TAKE 10 ... ALGEBRAIC FRACTIONS**

**Q1.** (a) Simplify  $\frac{2y - 12}{y^2 - 8y + 12}$

**(3)**

(b) Write as a single fraction  $\frac{3}{x - 4} - \frac{1}{x + 5}$

**(2)**

**Q2.** Simplify fully  $\frac{3x^2 - 6x}{x^2 + 2x - 8}$

**(3)**

**Q3.** Simplify completely  $\frac{2x^2 - 9x - 5}{4x^3 + 2x^2}$

**(3)**

**Q4.** Simplify fully  $\frac{2x^2 + 5x - 3}{x^2 - 9}$

**(3)**

**Q5.** (a) Solve  $\frac{4(8x - 2)}{3x} = 10$

**(3)**

(b) Write as a single fraction in its simplest form  $\frac{2}{y + 3} - \frac{1}{y - 6}$

**(3)**

**Q6.** Write  $\frac{5}{x-3} - \frac{4}{x+3}$  as a single fraction in its simplest form.

(3)

**Q7.** Solve  $\frac{h+7}{3} + \frac{2h-1}{2} = \frac{5}{6}$

(4)

**Q8.** Show that  $\frac{1}{2x^2+x-15} \div \frac{1}{3x^2+9x}$  simplifies to  $\frac{ax}{bx+c}$  where  $a$ ,  $b$  and  $c$  are integers.

(3)

**Q9.** (a) Write  $\frac{4x^2-9}{6x+9} \times \frac{2x}{x^2-3x}$  in the form  $\frac{ax+b}{cx+d}$  where  $a$ ,  $b$ ,  $c$  and  $d$  are integers.

(3)

(b) Express  $\frac{3}{x+1} + \frac{1}{x-2} - \frac{4}{x}$  as a single fraction in its simplest form.

(3)

**Q10.** Show that  $6 + \left[ (x+5) \div \frac{x^2+3x-10}{x-1} \right]$  simplifies to  $\frac{ax-b}{cx-d}$  where  $a$ ,  $b$ ,  $c$  and  $d$  are integers.

(4)