

(3) Partial Fractions

WORKING AT D/E

(1) Show that $\frac{6x-2}{(x+1)(x-3)} = \frac{A}{x+1} + \frac{B}{x-3}$
where A and B are integers to be found.

(2) Express each of the following in partial fractions

(a) $\frac{6x+18}{(x+4)(x-2)}$

(b) $\frac{x+1}{(x-6)(x+1)}$

(c) $\frac{3x-35}{x(x-7)}$

(3) (a) Factorise $x^2 - 2x - 24$

(b) Hence, express $\frac{5x}{x^2-2x-24}$ in partial fractions

WORKING AT B/C

(1) Express $\frac{5x+21}{(x+6)(4x+6)}$ in partial fractions.

(2) Express each of the following in partial fractions

(a) $\frac{7x-9}{x^2-x}$

(b) $\frac{-12x-20}{36x^2-25}$

(c) $\frac{5(2x-1)}{6x^2+x-1}$

(3) Show that $\frac{13x-4}{15(x^2+x-2)} \equiv \frac{A}{x+2} + \frac{B}{x-1}$
where A and B are rational fractions to be found.

WORKING AT A*/A

(1) Show, using partial fractions that

$$\frac{-2x^3 - x^2 - 2x + 7}{x^4 - 1}$$

can be written as $-\frac{4}{x^2+1} + \frac{1}{2(x-1)} - \frac{5}{2(x+1)}$