

## (4) Partial Fractions with Repeated Factors

### WORKING AT D/E

(1) Show that  $\frac{3x+2}{x^2(x+1)}$  can be written in the form

$\frac{A}{x} + \frac{B}{x^2} + \frac{C}{(x+1)}$  where  $A, B$  and  $C$  are integers.

(2) Using partial fractions find the values of  $A, B$  and  $C$ , given that

$$\frac{5x^2+13x+5}{x(x+1)^2} = \frac{A}{x} + \frac{B}{(x+1)} + \frac{C}{(x+1)^2}$$

(3) Express  $\frac{8x^2-27x+}{x(x-2)^2}$  in the form

$$\frac{A}{x} + \frac{B}{(x-2)} + \frac{C}{(x-2)^2}$$

### WORKING AT B/C

(1) Express  $\frac{-16x^2+19x+}{(x-1)(2x-1)^2}$ . You must show full workings.

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

(b) Hence, show that  $\frac{-2x^2-11x+}{x^3-3x^2}$  can be written in partial fractions

### WORKING AT A\*/A

(1) Express  $\frac{-x^2-4x+1}{x^3-3x^2+4}$  in partial fractions

(2) Express  $\frac{2x^2-4x+3}{(x-1)^3}$  in partial fractions