



Air maths tuition

Interact, engage and perform

## Partial fractions - Repeated linear factors (summary example)

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

$$\frac{2x^2-3}{(x-2)(x+3)^2} \equiv \frac{A}{x-2} + \frac{B}{x+3} + \frac{C}{(x+3)^2}$$

$$\therefore 2x^2-3 \equiv A(x+3)^2 + B(x+3)(x-2) + C(x-2)$$

when $x = -3$	when $x = 2$	when $x = 0$	Comparing coefficients of $x^2$
$\therefore 15 = -5C$	$\therefore 5 = 25A$	$\therefore -3 = \frac{9}{5} - 6B + 6$	
$\therefore C = -3$	$\therefore A = \frac{1}{5}$	$\therefore -15 = 9 - 30B + 30$	
		$\therefore 30B = 54 \Rightarrow B = \frac{54}{30} = \frac{9}{5}$	

$$\therefore \frac{2x^2-3}{(x-2)(x+3)^2} \equiv \frac{1}{5(x-2)} + \frac{9}{5(x+3)} - \frac{3}{(x+3)^2}$$

With the acknowledgement of [Exam Solutions](#).  
Find lots more revision sheets on [Air Maths Tuition](#).  
[This Video](#)



Exam Solutions

maths made easy