ALGEBRAIC FRACTIONS

1	2	3	4	5

± ALGEBRAIC FRACTIONS

Write $\frac{6}{2x+5} + \frac{2}{2x-5} + \frac{60}{4x^2-25}$ as a single simplified fraction

Factorise denominators

$$\frac{6}{2x+5} + \frac{2}{2x-5} + \frac{60}{(2x-5)(2x+5)}$$

x top & bottom of each fraction by factors 'missing' from the denominator

$$= \frac{6(2x-5)}{(2x+5)(2x-5)} + \frac{2(2x+5)}{(2x-5)(2x+5)} + \frac{60}{(2x-5)(2x+5)}$$

Add, using new brackets if necessary

$$= \frac{6(2x-5) + 2(2x+5) + 60}{(2x+5)(2x-5)}$$

Expand, tidy & factorise the numerator

$$= \frac{12x - 30 + 4x + 10 + 60}{(2x+5)(2x-5)}$$

$$= \frac{16x + 40}{(2x+5)(2x-5)}$$

Cancel any common factors.

$$= \frac{8(2x+5)}{(2x+5)(2x-5)}$$

$$= \frac{8}{2x-5}$$