SIMPLIFYING ALGEBRAIC FRACTIONS

Fractions must be simplified whenever possible, by cancelling common factors.

example 1:

$$\frac{{}^{3}\cancel{15}\,x\,\cancel{y}}{{}^{4}\cancel{20}\,\cancel{y}\,z} = \frac{3x}{4z}$$

example 2:

$$\frac{10ab}{15bc} = \frac{{}^{2}\cancel{10}\times a\times \cancel{b}}{{}^{3}\cancel{15}\times \cancel{b}\times c} = \frac{2a}{3c}$$

example 3:

$$\frac{18x^2y}{8xz} = \frac{{}^{9}\cancel{18}\times \cancel{x}\times x\times y}{{}^{4}\cancel{8}\times \cancel{x}\times z} = \frac{9xy}{4z}$$

SIMPLIFYING ALGEBRAIC FRACTIONS (CONT.)

Factorising can be used to simplify algebraic fractions. For example, $\frac{5x + 10}{7x + 14}$ can be simplified by first factorising the numerator and the denominator $\frac{5(x + 2)}{7(x + 2)} = \frac{5}{7}$.

Example:

$$\frac{7p + 14pq}{9p + 18pq} = \frac{7(p + 2q)}{9(p + 2q)} = \frac{7}{9}$$