The Twiner Method of Factoring Quadratic Expressions

Example: Factorise $6x^2 - x - 12$

$$\frac{(6x + \quad)(6x + \quad)}{6}$$

Write the 6 three times – once in each factor, and in the denominator.

$$= \frac{(6x + -9)(6x + 8)}{6}$$

Ask: what multiplies to give -72 (a x c) and adds to give -1 (b)?
Answer: -9 and 8
Put these numbers into the brackets.

$$= \frac{3(2x + -3)\ 2\ (3x + 4)}{6}$$

Factorise each bracket.

$$= \frac{\cancel{3}(2x - 3)\ \cancel{2}\ (3x + 4)}{\cancel{6}}$$

The factors of 3 and 2 divide out the 6 in the denominator.

$$= (2x - 3)(3x + 4)$$

Voila! If the expression can be factored, this method always works! It even works if the student forgets to take out a common factor initially.