

National 5 Homework

Algebraic Skills

Reducing Algebraic Fractions using Factors

1. Simplify the fraction $\frac{4p-12}{p^2-3p}$.
- 2a. Factorise $5x^2 - 20$
- 2b. Hence simplify $\frac{5x^2-20}{4x+8}$.
3. Fully factorise and simplify the fraction $\frac{5x-25}{x^2-25}$.
- 4a. Fully factorise $3t^2 - 27$
- 4b. Hence simplify the fraction $\frac{3t^2-27}{3t+9}$.
- 5a. Factorise $x^2 + 4x - 12$.
- 5b. Hence simplify $\frac{x^2+4x-12}{2x+12}$.
- 6a. Show that $(x - 2)$ is a common factor of $2x^2 - 8$ and $x^2 - 7x + 10$.
- 6b. Hence, state the fraction $\frac{2x^2-8}{x^2-7x+10}$ in its simplest form.
- 7a. Factorise $3a^2 - 12$
- 7b. Hence simplify $\frac{a^2-a-6}{3a^2-12}$
8. Simplify $\frac{x^2-4x}{x^2+x-20}$ **[SQA Paper 1 ; 3 Marks]**
9. Fully simplify the fraction $\frac{x^2+3x-18}{3x+18}$.
- 10a. Factorise $4x^2 - 25$
- 10b. Hence simplify $\frac{4x^2-25}{2x^2-x-10}$ **[SQA Paper 2 ; 1,3 Marks]**