



Skill: Simplifying Algebraic Fractions

Questions

Attempt these questions independently showing full and clear solutions. Check each answer as you go.

Combining Algebraic Fractions By Addition and Subtraction

Express each of the following as a single fraction in its simplest terms:

$$1. \frac{3}{x+1} - \frac{2}{x-4}$$

$$2. \frac{1}{2x-1} + \frac{5}{3-x}$$

$$3. \frac{4}{x} - \frac{7}{4x-3}$$

$$4. \frac{2}{x+3} + \frac{1}{x-1} - \frac{3}{(x-1)^2}$$

$$5. -\frac{1}{5-x} - \frac{2}{x+4} + \frac{5}{(x+4)^2}$$

$$6. \frac{8}{x} - \frac{3}{5-x} + \frac{2}{(5-x)^2}$$

$$7. \frac{1}{x^2-3x+2} - \frac{4}{x^2+2x-3}$$

$$8. \frac{2}{x^2-25} + \frac{x+1}{x^2+5x}$$

$$9. \frac{x}{x^2-x-6} + \frac{3}{2x^2+3x-2}$$

$$10. \frac{5}{3x^2-2x} + \frac{4}{12x-8} - \frac{2}{x^2}$$

Simplifying Algebraic Fractions by Factorisation and Cancellation

Simplify the following algebraic fractions by factorisation and cancellation.

$$11. \frac{x^2-3x+2}{x^2-5x+6}$$

$$12. \frac{5x^2-5}{10x+20} \times \frac{3x^2+18x+24}{x^2+5x+4}$$

$$13. \frac{x^2-2x}{6x^2+13x+6} \times \frac{9x^2-4}{2x^2-x-6}$$

$$14. \frac{2q^4-10q^2+8}{q^2-q-2}$$

$$15. \frac{2t^2-6t}{t^2-9} \div \frac{8t^2-8}{t^2+6t+5}$$

$$16. \frac{4x^2-3x}{4x^2-7x+3} \times \frac{2x^2+12x+10}{2x^2+10x}$$

$$17. \frac{25r^2-10r+1}{r^2+4} \div \frac{5r^2+9r-2}{2r^4-32}$$

$$18. \frac{6-8s}{8s^2+6s+9} \div \frac{2s^2+3s}{12s^2+36s+27}$$