

# Worksheet: Operations with Algebraic Fractions



**Q1:** Simplify  $\frac{4x - 2}{2x^2 - 1} - \frac{3x + 8}{2x^2 - 1}$ .

A  $\frac{7x + 6}{2x^2 - 1}$

B  $\frac{x - 10}{2x^2 - 1}$

C  $\frac{7x + 6}{(2x^2 - 1)^2}$

D  $\frac{x - 10}{(2x^2 - 1)^2}$

E  $\frac{7x - 10}{2x^2 - 1}$



Question Video

**Q2:** Simplify  $\frac{5x^2 - 7x}{3x - 2} \div \frac{2x - 5}{4x - 7}$ . Write your answer in fully factored form.

A  $\frac{(x - 7)(x + 3)}{(3x - 2)(2x - 7)}$

B  $\frac{x(5x + 3)(x - 7)}{(3x - 2)(x - 5)}$

C  $\frac{x(5x - 7)(4x - 7)}{(3x - 2)(2x - 5)}$

D  $\frac{x(5x - 7)(2x - 5)}{(3x - 2)(4x - 7)}$

E  $\frac{(x - 7)(4x - 7)}{(3x - 2)(x - 5)}$



Question Video

**Q3:** Given that  $\frac{a}{b}$  and  $\frac{c}{d}$  are algebraic fractions, write  $\frac{a}{b} + \frac{c}{d}$  in the form  $\frac{x}{y}$ .

A  $\frac{a + c}{b + d}$

B  $\frac{ac}{bd}$

C  $\frac{ad + bc}{bd}$

D  $\frac{a + c}{bd}$

**Q4:** Write

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

as a single fraction in its simplest form.

A  $\frac{2(x + 2)(x + 3)}{(x + 1)(2x + 3)}$

B  $\frac{8x}{(x + 1)(2x + 3)}$

C  $\frac{4 + 2x}{(x + 1)(2x + 3)}$

D  $\frac{(x + 2)(x + 3)}{(x + 1)(2x + 3)}$

E  $\frac{4 + 2x}{(2x + 3)}$



Question Video

**Q5:** Simplify  $\frac{7x}{3y} + \frac{8x}{9y}$ .

A  $\frac{29x}{9y}$

B  $\frac{5x}{9y^2}$

C  $\frac{31x}{9y}$

D  $\frac{5x}{4y}$

**Q6:** Write

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

as a single fraction in its simplest form.

A  $\frac{8}{(x+2)(x-1)}$

B  $\frac{2}{(x-1)}$

C  $\frac{6x+6}{(x+2)(x-1)}$

D  $\frac{6}{2x+1}$

E  $\frac{6x}{(x+2)(x-1)}$

**Q7:** Write

$$\frac{2}{3x} + \frac{5}{4x}$$

as a single fraction in its simplest form.

A  $\frac{1}{x}$

B  $\frac{23}{12x}$

C  $\frac{7}{12x}$

D  $\frac{23x}{12x^2}$

E  $\frac{7}{7x}$

**Q8:** Find the rational number that lies at one-third of the way from the smaller number between  $-\frac{6}{7}$  and  $\frac{6}{7}$ .

A  $-\frac{4}{7}$

B  $\frac{2}{7}$

C  $-\frac{2}{7}$

D  $-\frac{10}{7}$

E  $-\frac{6}{7}$