

Addition and subtraction

Example 6

Simplify $\frac{a}{4} + \frac{b}{5}$

$$\frac{a}{4} + \frac{b}{5} = \frac{5a + 4b}{20}$$

Example 7

Simplify $\frac{3x}{5} - \frac{x}{3}$

$$\frac{3x}{5} - \frac{x}{3} = \frac{9x - 5x}{15} = \frac{4x}{15}$$

Example 8

Simplify $\frac{2}{3b} + \frac{1}{2b}$

$$\frac{2}{3b} + \frac{1}{2b} = \frac{4 + 3}{6b} = \frac{7}{6b}$$

Example 9

Simplify $\frac{3+x}{7} - \frac{x-2}{3}$

Remember to use brackets here. Note sign change

$$\frac{3+x}{7} - \frac{x-2}{3} = \frac{3(3+x) - 7(x-2)}{21} = \frac{9+3x-7x+14}{21} = \frac{23-4x}{21}$$

Exercise 34

Simplify these.

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

2 $\frac{a}{5} + \frac{a}{4}$

3 $\frac{a}{3} - \frac{a}{4}$

4 $\frac{x}{4} - \frac{x}{6}$

5 $\frac{a}{3} + \frac{b}{4}$

6 $\frac{x}{5} + \frac{y}{6}$

7 $\frac{2x}{3} - \frac{x}{4}$

8 $\frac{4y}{5} - \frac{y}{4}$

9 $\frac{2a}{7} + \frac{3a}{14}$

10 $\frac{3b}{9} + \frac{5b}{18}$

11 $\frac{a}{4} + \frac{b}{3}$

12 $\frac{x}{2} - \frac{y}{5}$

13 $\frac{2a}{3} - \frac{a}{2}$

14 $\frac{4b}{5} - \frac{3b}{10}$

15 $\frac{a}{4} + \frac{2b}{3}$

16 $\frac{x}{9} + \frac{2y}{3}$

Exercise 34*

Simplify these.

1 $\frac{x}{6} + \frac{2x}{9}$

2 $\frac{a}{5} - \frac{2a}{15}$

3 $\frac{2a}{3} - \frac{3a}{7}$

4 $\frac{4y}{5} - \frac{2y}{9}$

5 $\frac{2x}{5} + \frac{4y}{7}$

6 $\frac{6a}{11} - \frac{2b}{5}$

7 $\frac{3a}{4} + \frac{a}{3} - \frac{5a}{6}$

8 $\frac{x}{3} + \frac{3x}{5} + \frac{x}{15}$

9 $\frac{3}{2b} + \frac{4}{3b}$

10 $\frac{5}{4c} + \frac{3}{10c}$

11 $\frac{2}{d} + \frac{3}{d^2}$

12 $\frac{1}{x^2} - \frac{2}{x}$

13 $\frac{2-x}{5} + \frac{3-x}{10}$

14 $\frac{x+4}{3} + \frac{x-3}{4}$

15 $\frac{y+3}{5} - \frac{y+4}{6}$

16 $\frac{3-a}{2} - \frac{3-a}{7}$

17 $\frac{x-3}{3} + \frac{x+5}{4} - \frac{2x-1}{6}$

18 $\frac{2y+1}{6} - \frac{y-2}{5} - \frac{y+4}{10}$

19 $\frac{a}{a-1} - \frac{a-1}{a}$

20 $\frac{4}{x-4} + \frac{3}{x+3}$