

COMPLEX FRACTIONS

➤ Simplify the expressions.

1)
$$\frac{\frac{1}{3}}{\frac{1}{5}}$$

2)
$$\frac{2 - \frac{1}{3}}{4 + \frac{11}{3}}$$

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

4)
$$\frac{\frac{a-2}{4}}{\frac{1}{a} - a}$$

5)
$$\frac{\frac{1}{a^2} - \frac{1}{a}}{\frac{1}{a^2} + \frac{1}{a}}$$

6)
$$\frac{2 - \frac{4}{x+2}}{5 - \frac{10}{x+2}}$$

7)
$$\frac{\frac{-5}{b-5} - 3}{\frac{10}{b-5} + 6}$$

8)
$$\frac{\frac{x}{x+1} - \frac{1}{x}}{\frac{x}{x+1} + \frac{1}{x}}$$

9)
$$\frac{\frac{3}{x}}{\frac{9}{x^2}}$$

10)
$$\frac{\frac{x}{3x-2}}{\frac{x}{9x^2-4}}$$

11)
$$\frac{\frac{a^2 - b^2}{4a^2b}}{\frac{a+b}{16ab^2}}$$

12)
$$\frac{1 - \frac{1}{x} - \frac{6}{x^2}}{1 - \frac{4}{x} + \frac{3}{x^2}}$$

$$13) \frac{1 - \frac{1}{x} - \frac{6}{x^2}}{1 - \frac{4}{x} + \frac{3}{x^2}}$$

$$14) \frac{1 - \frac{12}{3x+10}}{x - \frac{8}{3x+10}}$$

$$15) \frac{\frac{1}{p^2} - \frac{1}{q^2}}{\frac{2}{p^2} - \frac{1}{pq} - \frac{1}{q^2}}$$

$$16) \frac{x-4 + \frac{9}{2x+3}}{x+3 - \frac{5}{2x+3}}$$

$$17) \frac{\frac{15}{x^2} - \frac{2}{x} - 1}{\frac{4}{x^2} - \frac{5}{x} + 4}$$

$$18) \frac{\frac{1}{a} - \frac{3}{a-2}}{\frac{2}{a} + \frac{5}{a-2}}$$

$$19) \frac{\frac{1}{y^2} - \frac{1}{xy} - \frac{2}{x^2}}{\frac{1}{y^2} - \frac{3}{xy} + \frac{2}{x^2}}$$

$$20) \frac{\frac{x-1}{x+1} - \frac{x+1}{x-1}}{\frac{x-1}{x+1} + \frac{x+1}{x-1}}$$

$$21) 4 - \frac{2}{2 - \frac{3}{x}}$$

$$22) \frac{x^{-1} + y^{-1}}{x^{-1} - y^{-1}}$$

$$23) \frac{x - \frac{1}{x}}{1 + \frac{1}{x}}$$

$$24) a + \frac{a}{2 + \frac{1}{1 - \frac{2}{a}}}$$