

Oefeningen breuken

Oefening 1. Schrijf zo eenvoudig mogelijk.

$$1. \frac{1}{6} + \frac{1}{2} = \frac{2}{3}$$

$$\text{Uitwerking: } \frac{1}{6} + \frac{1}{2} = \frac{1}{6} + \frac{3}{6} = \frac{4}{6} = \frac{2}{3}$$

$$2. \frac{2}{9} - \frac{1}{6} = \frac{1}{18}$$

$$\text{Uitwerking: } \frac{2}{9} - \frac{1}{6} = \frac{4}{18} - \frac{3}{18} = \frac{1}{18}$$

$$3. \frac{1}{3} - \frac{1}{9} + \frac{2}{27} = \frac{8}{27}$$

$$\text{Uitwerking: } \frac{1}{3} - \frac{1}{9} + \frac{2}{27} = \frac{9}{27} - \frac{3}{27} + \frac{2}{27} = \frac{8}{27}$$

$$4. \frac{2}{3} \cdot \frac{5}{7} = \frac{10}{21}$$

$$\text{Uitwerking: } \frac{2}{3} \cdot \frac{5}{7} = \frac{10}{21}$$

$$5. \frac{15}{6} \cdot \frac{3}{2} = \frac{15}{4}$$

$$\text{Uitwerking: } \frac{15}{6} \cdot \frac{3}{2} = \frac{5}{2} \cdot \frac{3}{2} = \frac{15}{4}$$

$$6. \frac{2}{5} \cdot \frac{9}{22} \cdot \frac{4}{18} = \frac{2}{55}$$

$$\text{Uitwerking: } \frac{2}{5} \cdot \frac{9}{22} \cdot \frac{4}{18} = \frac{2^1 \cdot 3^1 \cdot 2}{5 \cdot 2 \cdot 11 \cdot 3} = \frac{2}{55}$$

$$7. \frac{6}{5} : \frac{2}{15} = 9$$

$$\text{Uitwerking: } \frac{6}{5} : \frac{2}{15} = \frac{6}{5} \cdot \frac{15}{2} = \frac{6^1 \cdot 3^1}{5 \cdot 2} = \frac{9}{1} = 9$$

$$8. \frac{12}{25} : \frac{18}{35} = \frac{14}{15}$$

$$\text{Uitwerking: } \frac{12}{25} : \frac{18}{35} = \frac{12}{25} \cdot \frac{35}{18} = \frac{12^2 \cdot 35^1}{25 \cdot 18} = \frac{14}{15}$$

$$9. \frac{\frac{1}{4}}{\frac{3}{2}} = \frac{1}{6}$$

$$\text{Uitwerking: } \frac{\frac{1}{4}}{\frac{3}{2}} = \frac{1}{4} : \frac{3}{2} = \frac{1}{4} \cdot \frac{2}{3} = \frac{1}{6}$$

$$10. \frac{\frac{1}{2} + \frac{1}{4}}{\frac{1}{6} + \frac{1}{3}} = \frac{3}{2}$$

$$\text{Uitwerking: } \frac{\frac{1}{2} + \frac{1}{4}}{\frac{1}{6} + \frac{1}{3}} = \frac{\frac{2+1}{4}}{\frac{1+2}{6}} = \frac{\frac{3}{4}}{\frac{3}{6}} = \frac{3}{4} \cdot \frac{6}{3} = \frac{3}{2}$$

Oefening 2. Schrijf zo eenvoudig mogelijk.

$$1. 20 \cdot \left(\frac{5}{4} - \frac{4}{5} \right) = 9$$

$$2. -\frac{6}{27} + \frac{27}{1} + \frac{16+14}{9} - \frac{3}{14+13} - 3 \cdot 9 = 3$$

$$3. -\frac{(1-a)-2}{a+1} = 1 \quad (a \neq -1)$$

Oefening 3. Schrijf als een zo eenvoudig mogelijke breuk. Veronderstel dat alle uitdrukkingen bestaan.

$$1. \frac{\frac{a-b}{c}}{\frac{a-b}{2c}} = \frac{a}{2c}$$

$$2. \frac{\frac{b}{1-\frac{a}{b}}}{1-\frac{a}{b}} = -1$$

$$3. \frac{1-\frac{a+b}{b}}{\frac{a^2}{b}} = -\frac{1}{a}$$

$$4. \frac{a}{b} + \frac{b}{c} = \frac{ac+b^2}{bc}$$

$$5. a + \frac{a}{1+a} = \frac{2a+a^2}{1+a}$$

$$6. 1 + \frac{a}{1+a} = \frac{1+2a}{1+a}$$

$$7. 1 + \frac{1}{1+a} = \frac{2+a}{1+a}$$

$$8. a + \frac{1}{1+a} = \frac{1+a+a^2}{1+a}$$

$$9. \frac{1}{1+\frac{1}{1+a}} = \frac{1+a}{2+a}$$

$$10. \frac{1}{1+\frac{1}{1+\frac{1}{1+a}}} = \frac{2+a}{3+2a}$$