

## 1. Kwadraten met wortels

voorbeeld:

$$(2 \cdot \sqrt{5})^2 = 2 \cdot \sqrt{5} \cdot 2 \cdot \sqrt{5} = 2 \cdot 2 \cdot \sqrt{5} \cdot \sqrt{5} = 4 \cdot 5 = 20$$

$$\text{Let op: } \sqrt{a} \times \sqrt{a} = a \text{ en } (\sqrt{a})^2 = a \text{ en } \sqrt{a^2} = a$$

oefensommen:

$$(\sqrt{2})^2 =$$

$$(\sqrt{3} \cdot \sqrt{5})^2 =$$

$$(\sqrt{2^2})^2 =$$

$$\left(\frac{2\sqrt{3}}{\sqrt{2}}\right)^2 =$$

$$\left(\frac{\sqrt{1}}{\sqrt{2}}\right)^2 =$$

$$\left(\frac{\sqrt{2}}{\sqrt{3}}\right)^2 =$$

$$(\sqrt{5} \cdot 4)^2 =$$

$$(3\sqrt{3})^2 =$$

$$(-\sqrt{2})^2 =$$

$$-(\sqrt{3} \cdot \sqrt{5})^2 =$$

## 2. Herleiden van wortels

voorbeeld:

$$\sqrt{128} = \sqrt{64 \cdot 2} = \sqrt{64} \cdot \sqrt{2} = 8 \cdot \sqrt{2}$$

$$\sqrt{150} = \sqrt{25 \cdot 6} = \sqrt{25} \cdot \sqrt{6} = 5 \cdot \sqrt{6}$$

oefensommen:

$$\sqrt{28} =$$

$$\sqrt{300} =$$

$$\sqrt{99} =$$

$$\sqrt{160} =$$

$$\sqrt{54} =$$

$$\sqrt{288} =$$

$$\sqrt{80} =$$

$$\sqrt{360} =$$

$$\sqrt{98} =$$

$$\sqrt{243} =$$

## 3. Vermenigvuldigen van wortels

$$3\sqrt{5} \cdot 2\sqrt{10} = 3 \cdot \sqrt{5} \cdot 2 \cdot \sqrt{10} = 3 \cdot 2 \cdot \sqrt{5} \cdot \sqrt{10} = 6 \cdot \sqrt{50}$$

$$6 \cdot \sqrt{50} = 6 \cdot \sqrt{25 \cdot 2} = 6 \cdot 5 \cdot \sqrt{2} = 30 \sqrt{2}$$

$$2\sqrt{3} \cdot 2\sqrt{12} =$$

$$\sqrt{5} \cdot -\frac{1}{5}\sqrt{10} =$$

$$\frac{1}{3}\sqrt{2} \cdot \frac{3}{4}\sqrt{8} =$$

$$\sqrt{18} \cdot 2\sqrt{6} =$$

$$\frac{1}{15}\sqrt{5} \cdot \sqrt{20} =$$

$$-\sqrt{2} \cdot -\sqrt{70} =$$

$$\sqrt{8} \cdot \frac{1}{32}\sqrt{8} =$$

$$\sqrt{28} \cdot 2\sqrt{7} =$$

$$5\sqrt{10} \cdot \sqrt{40} =$$

$$-3\sqrt{38} \cdot \sqrt{18} =$$

## 4. Wortels van breuken

voorbeeld:

$$\sqrt{20\frac{1}{4}} = \sqrt{\frac{81}{4}} = \frac{\sqrt{81}}{\sqrt{4}} = \frac{9}{2} = 4\frac{1}{2}$$

$$\sqrt{4\frac{1}{4}} = \sqrt{\frac{17}{4}} = \frac{1}{2}\sqrt{17}$$

oefensommen:

$$\sqrt{\frac{4}{9}} =$$

$$\sqrt{9\frac{1}{9}} =$$

$$\sqrt{1\frac{2}{7}} =$$

$$\sqrt{4\frac{1}{6}} =$$

$$\sqrt{2\frac{1}{4}} =$$

$$\sqrt{\frac{3}{98}} =$$

$$\sqrt{\frac{1}{32}} =$$

$$\sqrt{-\frac{9}{16}} =$$

$$\sqrt{7\frac{1}{5}} =$$

$$\sqrt{\left(-\frac{2}{3}\right)^2} =$$

## 5. Wortels delen

voorbeeld:

$$\frac{\sqrt{16}}{\sqrt{25}} = \frac{4}{5}$$

$$\frac{2\sqrt{15}}{\sqrt{5}} = 2 \cdot \frac{\sqrt{15}}{\sqrt{5}} = 2 \cdot \sqrt{\frac{15}{5}} = 2 \cdot \sqrt{3}$$

$$\frac{10\sqrt{12}}{5\sqrt{3}} = \frac{10}{5} \cdot \frac{\sqrt{12}}{\sqrt{3}} = 2 \cdot \sqrt{\frac{12}{3}} = 2 \cdot \sqrt{4} = 2 \cdot 2 = 4$$

oefensommen:

$$\frac{\sqrt{50}}{\sqrt{2}} =$$

$$\frac{-\sqrt{0.8}}{-\sqrt{0.2}} =$$

$$\frac{-\sqrt{20}}{\sqrt{4}} =$$

$$\frac{5\sqrt{300}}{3\sqrt{2}} =$$

$$\frac{\sqrt{200}}{\sqrt{5}} =$$

$$\frac{7\sqrt{200}}{3\sqrt{800}} =$$

$$\frac{3\sqrt{60}}{\sqrt{5}} =$$

$$\frac{\sqrt{16}}{\sqrt{\frac{1}{4}}} =$$

$$\frac{\sqrt{10}}{\sqrt{0,1}} =$$

$$\frac{\sqrt{135}}{-4\sqrt{15}} =$$

## 6. Wortels in de noemer wegwerken

voorbeeld:

$$\frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2} = \frac{1}{2}\sqrt{2}$$

$$\frac{5}{2\sqrt{2}} = \frac{5}{2\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{5\sqrt{2}}{2 \cdot 2} = 1\frac{1}{4}\sqrt{2}$$

$$\frac{1+\sqrt{2}}{\sqrt{3}} = \frac{1+\sqrt{2}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{3}+\sqrt{6}}{3} = \frac{1}{3}\sqrt{3} + \frac{1}{3}\sqrt{6}$$

oefensommen:

$$\frac{2}{\sqrt{7}} =$$

$$\frac{1}{3\sqrt{6}} =$$

$$\frac{5}{\sqrt{5}} =$$

$$\frac{-8}{\sqrt{8}} =$$

$$\frac{5}{\sqrt{10}} =$$

$$\frac{6\sqrt{5}}{3\sqrt{3}} =$$

$$\frac{-3\sqrt{10}}{\sqrt{3}} =$$

$$\frac{-3\sqrt{6}}{\sqrt{5}} =$$

$$\frac{-8}{6\sqrt{8}} =$$

$$\frac{\frac{1}{2}\sqrt{3}}{\sqrt{5}} =$$