4 Oefeningen

1 Reken uit.

a $\left(\frac{2}{3}\right)^2 = \frac{4}{9}$

b $\left(\frac{2}{3}\right)^3 = \frac{8}{27}$

c $\frac{2^2}{3} = \frac{4}{3}$

d $\left(\frac{9}{4}\right)^2 = \frac{81}{16}$

e $\frac{9^2}{4} = \frac{81}{4}$

f $\left(\frac{5}{7}\right)^2 = \frac{25}{49}$

g $\left(\frac{1}{2}\right)^4 = \frac{1}{16}$

h $\left(\frac{1}{4}\right)^2 = \frac{1}{16}$

i $\left(\frac{1}{3}\right)^3 = \frac{1}{27}$

j $\frac{2^3}{3^2} = \frac{8}{9}$

k $\frac{2^4}{4^2} = \frac{16}{16} = 1$

l $\left(\frac{1}{10}\right)^3 = \frac{1}{1000}$

m $\left(\frac{4}{5}\right)^3 = \frac{64}{125}$

n $\left(\frac{5}{9}\right)^2 = \frac{25}{81}$

o $\frac{1^6}{6^1} = \frac{1}{6}$

p $\left(\frac{4}{25}\right)^0 = 1$

2 Reken uit.

a $\left(-\frac{2}{3}\right)^3 = -\frac{8}{27}$

b $\left(-\frac{2}{7}\right)^2 = \frac{4}{49}$

c $\left(-\frac{5}{9}\right)^2 = \frac{25}{81}$

d $-\frac{2^2}{3} = -\frac{4}{3}$

e $-\left(\frac{3}{4}\right)^2 = -\frac{9}{16}$

f $-\frac{(-1)^2}{(-2)^1} = -\frac{1}{-2} = \frac{1}{2}$

g $\frac{(-1)^6}{(-6)^1} = \frac{1}{-6} = -\frac{1}{6}$

h $-\frac{4^2}{3} = -\frac{16}{3}$

i $\left(-\frac{4}{3}\right)^2 = \frac{16}{9}$

j $\left(-\frac{1}{2}\right)^5 = -\frac{1}{32}$

k $\frac{(-4)^2}{(-4)^3} = \frac{16}{-64} = -\frac{1}{4}$

l $-\frac{4^2}{3} = -\frac{16}{3}$

m $-\frac{4^2}{5} = -\frac{16}{5}$

n $-\left(-\frac{5}{3}\right)^2 = -\frac{25}{9}$

o $-\frac{9^2}{2} = -\frac{81}{2}$

p $\frac{(-2)^0}{-4^0} = \frac{1}{-1} = -1$

3 Ga na (zonder uit te rekenen) of voor volgende machten de resultaten positief of negatief zijn.

a $(-4)^4$ ⊕ ⊖

b $(-5)^3$ ⊕ ⊖

c $(-15)^2$ ⊕ ⊖

d $-56{,}78^0$ ⊕ ⊖

e $-(1{,}43)^0$ ⊕ ⊖

f $-(-59{,}3)^3$ ⊕ ⊖

g $-50\,185^2$ ⊕ ⊖

h $-(-3)^3$ ⊕ ⊖

i $-(-3^3)$ ⊕ ⊖

j $-(-3)^4$ ⊕ ⊖

k $-10{,}637^3$ ⊕ ⊖

l $(-975)^{20}$ ⊕ ⊖

m $(-189)^{31}$ ⊕ ⊖

n $-(-191)^{40}$ ⊕ ⊖

o $-(-567)^{51}$ ⊕ ⊖

4 Bereken de volgende machten.

a $(0{,}2)^2 =$ 0,04

b $(0{,}3)^2 =$ 0,09

c $(-0{,}2)^3 =$ −0,008

d $(-0{,}5)^2 =$ 0,25

e $(1{,}2)^2 =$ 1,44

f $(0{,}25)^2 =$ 0,0625

g $(-0{,}5)^3 =$ −0,125

h $(-1{,}1)^2 =$ 1,21

i $(-0{,}3)^4 =$ 0,0081

j $(-0{,}5)^4 =$ 0,0625

k $(-0{,}1)^4 =$ 0,0001

l $(-0{,}2)^5 =$ −0,00032

m $(0{,}1)^5 =$ 0,00001

n $(-0{,}1)^6 =$ 0,000001

o $(0{,}3)^0 =$ 1

* **5** Verbind de opgaven die hetzelfde resultaat hebben.

$\frac{1}{4} = \left(\frac{1}{2}\right)^2$ $\quad \frac{2^3}{4} = 2$

$\frac{1}{2} = \frac{(-4)^2}{2^5}$ $\quad -\left(\frac{-2}{8}\right)^1 = \frac{1}{4}$

$2 = \frac{2^6}{2^5}$ $\quad \frac{4}{8} = \frac{1}{2}$

2

$1 = \frac{-4^2}{-2^4}$

$-\frac{1}{16} = -\left(\frac{2}{8}\right)^2$ $\quad \frac{2^6}{8^2} = 1$

6 Bereken volgende vierkantswortels.

a $\sqrt{81} =$ 9

b $\sqrt{\frac{4}{25}} =$ $\frac{2}{5}$

c $\sqrt{\frac{144}{169}} =$ $\frac{12}{13}$

d $\frac{\sqrt{36}}{9} =$ $\frac{6}{9} = \frac{2}{3}$

e $-\sqrt{\frac{1}{121}} =$ $-\frac{1}{11}$

f $\frac{\sqrt{49}}{16} =$ $\frac{7}{16}$

g $\frac{\sqrt{49}}{\sqrt{36}} =$ $\frac{7}{6}$

h $\frac{\sqrt{64}}{16} =$ $\frac{8}{16} = \frac{1}{2}$

*7 Bereken volgende vierkantswortels.

a $\sqrt{0,25} =$ 0,5

b $-\sqrt{0,01} =$ –0,1

c $\sqrt{0,0001} =$ 0,01

d $-\sqrt{0,16} =$ –0,4

e $-\sqrt{0,64} =$ –0,8

f $-\sqrt{0,0049} =$ –0,07

g $\sqrt{\sqrt{16}} =$ $\sqrt{4} = 2$

h $\sqrt{\sqrt{81}} =$ $\sqrt{9} = 3$

8 Bereken met ICT.

a $\sqrt{15\,625} =$ 125

b $\sqrt{1354,24} =$ 36,8

c $\sqrt{677\,329} =$ 823

d $\sqrt{10,3041} =$ 3,21

*9 Tussen welke twee opeenvolgende natuurlijke getallen liggen volgende vierkantswortels?
Los dit op zonder ICT te gebruiken.

a 2 $< \sqrt{5} <$ 3

b 3 $< \sqrt{11} <$ 4

c 5 $< \sqrt{30} <$ 6

d 6 $< \sqrt{47} <$ 7

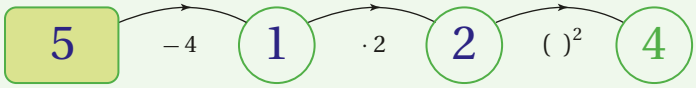
e 9 $< \sqrt{96} <$ 10

f 20 $< \sqrt{403} <$ 21

g 11 $< \sqrt{140} <$ 12

h 999 $< \sqrt{999\,999} <$ 1000

*10 a Welk getal hoort in het groene vlak te staan?



b Er zijn bij dit probleem twee oplossingen. Wat is de tweede oplossing? 3

11 Vul in met $<$ of $>$ of $=$.

a $(0,01)^2 ___ < ___ \left(\frac{1}{10}\right)^3$

$0,0001 < 0,001$

b $\left(-\frac{1}{4}\right)^3 ___ < ___ \left(\frac{1}{4}\right)^3$

$-\frac{1}{64} < \frac{1}{64}$

c $(0,5)^2 ___ > ___ (0,2)^5$

$0,25 > 0,00032$

d $2^4 ___ = ___ 4^2$

$16 = 16$

e $(0,5)^2 ___ > ___ \left(\frac{1}{5}\right)^2$

$0,25 > \frac{1}{25} = 0,04$

f $(0,3)^3 ___ < ___ (0,3)^2$

$0,027 < 0,09$

g $\left(\frac{-11}{3}\right)^0 ___ = ___ \left(\frac{-3}{11}\right)^0$

$1 = 1$

h $(1,1)^2 ___ < ___ (1,1)^3$

$1,21 < 1,331$

i $0^1 ___ < ___ \left(\frac{1}{2}\right)^2$

$0 < \frac{1}{4}$

j $\left(\frac{-3}{4}\right)^1 ___ > ___ \left(\frac{-4}{3}\right)^1$

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