



Uitwerkingen extra opgaven hoofdstuk 1 Rekenen met getallen

1. a $-1-2-3=-6$
b $-1-(2-3)=-1-(-1)=-1+1=0$
c $-1-(-2)-3=-1+2-3=-2$
d $-1-(-2-3)=-1-(-5)=-1+5=4$
e $-5-3-1=-9$
f $-5-(1-3)=-5-(-2)=-5+2=-3$
g $-5-(-3)-1=-5+3-1=-3$
h $-5-(-3-1)=-5-(-3-1)-5-(-4)=-5+4=-1$
i $-3-(2-6)=-3-(-4)=-3+4=1$
j $-1-(-3)-1=-1+3-1=1$
2. a $2+6/4+(2+6)/4=2+3/2+8/4=2+3/2+2=5\frac{1}{2}$
b $2+6/(4+2)/4=2+6/6/4=2+1/4=2\frac{1}{4}$
c $(1+6)/(4+6/2)=7/(4+3)=7/7=1$
d $-3\times(-4)-5+6-7\times8=12-5-56=-49$
e $3-9/6-(3+9)/6=3-3/2-12/6=3-3/2-2=-\frac{1}{2}$
f $2+9/(4-1)/3=2+9/3/3=2+3/3=2+1=3$
g $(-1+6)/(3+4/2)=5/(3+2)=5/5=1$
h $5-3\times(-4)-5+6-6/2\times3=5+12-5+6-3\times3=5+12-5+6-9=9$
3. a $-3\times(4-5)=-3\times4+3\times5$; waar: associatieve eigenschap
b $-3\times(-4-5)=3\times4-3\times5$; niet waar: $-3\times(-4-5)=3\times4-3\times(-5)$
c $(3-8)=-(-8-3)$; waar, associatieve eigenschap en commutatieve eigenschap
d $-2+(4-5)=-2+4+2+5$; niet waar: $-2+(4-5)=-2+4-5$
e $-3\times(4+5)=-3\times4-3\times5$; waar: associatieve eigenschap
f $-3\times(4-5)=-3\times4+3\times5$; waar: associatieve eigenschap
g $(5-9)=-(-9-5)$; waar, associatieve eigenschap en commutatieve eigenschap
h $-3+(4-5)=-3+4+3+5$; niet waar: $-3+(4-5)=-3+4-5$
4. a 2 en 5; kgv=10
b 3 en 8; kgv=24
c 4 en 6; kgv=12
d 5 en 15; kgv=15
e 6 en 22; kgv=66
f 12 en 18; kgv=36
5. a 2, 5 en 6; kgv=30
b 3, 8 en 12; kgv=24
c 4, 5 en 6; kgv=60
d 5, 6 en 7; kgv=210



Toegepaste Wiskunde inleiding – 6^e druk

e 6, 15 en 20; kgv=120

f 8, 9 en 12; kgv=72

6. a $1\frac{5}{12} - \frac{7}{12} - 2\frac{7}{12} = \frac{17}{12} - \frac{7}{12} - \frac{31}{12} = \frac{17-7-31}{12} = \frac{-21}{12} = \frac{-7}{4} = -1\frac{3}{4}$

b $1\frac{3}{8} - \frac{5}{8} - 2\frac{7}{8} = \frac{11}{8} - \frac{5}{8} - \frac{23}{8} = \frac{11-5-23}{8} = \frac{-17}{8} = -2\frac{1}{8}$

c $2\frac{3}{7} - \frac{4}{7} - 3\frac{6}{7} = \frac{17}{7} - \frac{4}{7} - \frac{27}{7} = \frac{17-4-27}{7} = \frac{-14}{7} = -2$

d $3\frac{1}{8} + \frac{7}{20} - 2\frac{2}{5} = \frac{25}{8} + \frac{7}{20} - \frac{12}{5} = \frac{125}{40} + \frac{14}{40} - \frac{96}{40} = \frac{125+14-96}{40} = \frac{43}{40} = 1\frac{3}{40}$

e $3\frac{1}{6} + \frac{7}{12} - 2\frac{2}{9} = \frac{19}{6} + \frac{7}{12} - \frac{20}{9} = \frac{114}{36} + \frac{21}{36} - \frac{80}{36} = \frac{114+21-80}{36} = \frac{55}{36} = 1\frac{19}{36}$

f $2\frac{1}{8} + \frac{5}{12} - 2\frac{5}{6} = \frac{17}{8} + \frac{5}{12} - \frac{17}{6} = \frac{51}{24} + \frac{10}{24} - \frac{68}{24} = \frac{51+10-68}{24} = \frac{-7}{24} = -\frac{7}{24}$

7. a $2\frac{11}{12} \cdot \frac{3}{7} = \frac{35}{12} \cdot \frac{3}{7} = \frac{35 \cdot 3}{12 \cdot 7} = \frac{5 \cdot 1}{4 \cdot 1} = \frac{5}{4} = 1\frac{1}{4}$

b $2\frac{2}{15} \cdot \frac{3}{8} = \frac{32}{15} \cdot \frac{3}{8} = \frac{32 \cdot 3}{15 \cdot 8} = \frac{4 \cdot 1}{5 \cdot 1} = \frac{4}{5}$

c $2\frac{5}{11} \cdot \frac{2}{9} = \frac{27}{11} \cdot \frac{2}{9} = \frac{27 \cdot 2}{11 \cdot 9} = \frac{3 \cdot 2}{11 \cdot 1} = \frac{6}{11}$

d $\frac{5\frac{2}{11}}{-2\frac{13}{22}} = -\frac{\frac{57}{11}}{\frac{57}{22}} = -\frac{57}{11} \cdot \frac{22}{57} = -\frac{1}{1} \cdot \frac{2}{1} = -2$

e $\frac{1\frac{3}{8}}{2\frac{3}{4}} = \frac{\frac{11}{8}}{\frac{11}{4}} = \frac{11}{8} \cdot \frac{4}{11} = \frac{1}{2} \cdot \frac{1}{1} = \frac{1}{2}$

f $\frac{-3\frac{4}{13}}{1\frac{17}{26}} = -\frac{\frac{43}{13}}{\frac{43}{26}} = -\frac{43}{13} \cdot \frac{26}{43} = -\frac{1}{1} \cdot \frac{2}{1} = -2$

8. a $2\frac{11}{12} \cdot \frac{3}{7} + 1\frac{3}{8} - 2\frac{5}{8} = \frac{35}{12} \cdot \frac{3}{7} + \frac{11}{8} - \frac{21}{8} = \frac{5}{4} + \frac{11}{8} - \frac{21}{8} = \frac{10+11-21}{8} = 0$

b

$4\frac{4}{15} \cdot \frac{3}{8} - 3\frac{3}{7} \cdot \frac{7}{4} + \frac{5}{6} \cdot 3\frac{3}{4} = \frac{64}{15} \cdot \frac{3}{8} - \frac{24}{7} \cdot \frac{7}{4} + \frac{5}{6} \cdot \frac{15}{4} = \frac{8}{5} - \frac{6}{1} + \frac{25}{8} = \frac{64}{40} - \frac{240}{40} + \frac{125}{40} = \frac{51}{40} = 1\frac{11}{40}$

c $\frac{2\frac{9}{11} - 3\frac{5}{22}}{-\frac{13}{22} \cdot \frac{3}{8} + \frac{5}{16}} = \frac{\frac{11}{11} - \frac{71}{22}}{-\frac{39}{176} + \frac{5}{16}} = \frac{\frac{22}{22} - \frac{71}{22}}{-\frac{39}{176} + \frac{55}{176}} = \frac{-\frac{9}{22}}{\frac{16}{176}} = \frac{-\frac{9}{22}}{\frac{1}{11}} = -\frac{9}{22} \cdot \frac{11}{1} = -\frac{9}{2} = -4\frac{1}{2}$

d $\frac{5\frac{2}{3} \cdot \frac{5}{8} - 2\frac{1}{4}}{1\frac{7}{18} - \frac{7}{15} \cdot \frac{7}{6}} = \frac{\frac{17}{3} \cdot \frac{5}{8} - \frac{9}{4}}{\frac{25}{18} - \frac{49}{90}} = \frac{\frac{85}{24} - \frac{9}{4}}{\frac{125}{90} - \frac{49}{90}} = \frac{\frac{85}{24} - \frac{54}{24}}{\frac{24}{90} - \frac{24}{90}} = \frac{\frac{24}{24}}{\frac{24}{90}} = \frac{31}{24} \cdot \frac{90}{76} = \frac{31}{4} \cdot \frac{15}{76} = \frac{465}{304} = 1\frac{161}{304}$

9. a $\frac{3}{16} = \frac{3 \times 625}{10000} = 0,1875$

b $-1\frac{3}{8}; \frac{3}{8} = \frac{375}{8} = 0,375$, dus $-1\frac{3}{8} = -1,375$

c $2\frac{3}{80}; \frac{3}{80} = \frac{3 \times 125}{10000} = 0,0375$, dus $2\frac{3}{80} = 2,0375$

d $2\frac{11}{40}; \frac{11}{40} = \frac{11 \times 25}{1000} = \frac{275}{1000} = 0,275$, dus $2\frac{11}{40} = 2,275$



- 10.** a $0,74 = \frac{74}{100} = \frac{37}{50}$
b $0,75 = \frac{75}{100} = \frac{3}{4}$
c $0,76 = \frac{76}{100} = \frac{19}{25}$
d $2,27 = 2\frac{27}{100} = \frac{227}{100}$
e $1,0125 = 1\frac{125}{10000} = 1\frac{1}{80} = \frac{81}{80}$
f $-0,025 = -\frac{25}{1000} = -\frac{1}{40}$
- 11.** a 3 decimalen: 41,834
b 2 decimalen: 41,83
c 0 decimalen (gehelen): 42
d 100-tallen: 0
- 12.** a 4 decimalen: 751,8468
b 2 decimalen: 751,85
c 0 decimalen (gehelen): 752
d 10-tallen: 750
- 13.** a $-34567898,7654 = -3,45678987654E07$
b $-0,0001000786 = -1,000786E-04$
c $-468021,357 = -4,68021357E05$
d $-0,000080321 = -8,0321E-05$
- 14.** a $2,897E06 = 2897000$
b $-7,5E-04 = -0,00075$
c $-3,7E03 = -3700$
d $4,879E-01 = 0,4879$
e $2,897504E05 = 289750,4$
f $-7,503E-03 = -0,007503$
g $-7,03E04 = -70300$
h $4,879E-02 = 0,04879$
- 15.** a $3,27 - 4,21 + 100200,13 \approx 3 - 4 + 100200 = 100199$
b $403,27 - 100,81 + 148,13 \approx 403 - 101 + 148 = 450$
c $3,17 \times 5,84 \approx 3 \times 6 = 18$
d $511 \times 7,8 \approx 500 \times 8 = 4000$
- 16.** a $\frac{413,21}{51,97} \approx \frac{400}{50} = 8$
b $\frac{1001-3}{98+3} \approx \frac{1000}{100} = 10$
c $\frac{29 \times 31}{28 \times 32} \approx \frac{30 \times 30}{30 \times 30} = 1$



$$d \quad \frac{17 \times 22 - 1}{0,01 - 1} \approx \frac{20 \times 20 - 1}{0,01 - 1} \approx \frac{400}{-1} = -400$$