

Graad 6 – Boek B
Onderwysershandleiding
(Hersiene CAPS uitgawe)
Hersien vir 2023

INHOUD:

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Hoofstuk B1

Breuke

B1.1 Basiese Breuke:

Oefening 1:

Datum: _____

(1) Beantwoord die vrae.

2	5	31	45	32	33
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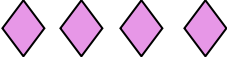
- (a) Watter breukdeel van die getalle in die blok is ewe getalle? $\frac{2}{6}$ of $\frac{1}{3}$
- (b) Watter breukdeel van die getalle in die blok is nie ewe getalle nie? $\frac{4}{6} = \frac{2}{3}$
- (c) Watter breukdeel van die getalle in die blok het 'n '3' in? $\frac{3}{6} = \frac{1}{2}$
- (d) Watter breukdeel van die getalle in die blok het 'n '2' in? $\frac{2}{6} = \frac{1}{3}$
- (e) Hoeveel elemente in die blok bestaan uit natuurlike getalle? **6**

(2) Watter breukdeel is ingekleur en watter breukdeel is nie ingekleur nie?

(a)  (b) 

Breukdeel ingekleur: $\frac{3}{6}$ $\frac{4}{5}$

Breukdeel nie ingekleur nie: $\frac{3}{6}$ $\frac{1}{5}$

Breukdeel ingekleur: $\frac{4}{4}$ $\frac{2}{3}$

Breukdeel nie ingekleur nie: $\frac{0}{4}$ $\frac{1}{3}$

(3) Gebruik die tabel om die breuke in stygende orde te rangskik.

1 hele							
$\frac{1}{2}$				$\frac{1}{2}$			
$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		4	
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

$\frac{1}{2}; \frac{1}{4}; \frac{2}{2}; \frac{1}{8}$	→	$\frac{1}{8}; \frac{1}{4}; \frac{1}{2}; \frac{2}{2}$
$\frac{3}{4}; \frac{1}{4}; \frac{7}{4}; \frac{1}{1}$	→	$\frac{1}{4}; \frac{3}{4}; \frac{1}{1}; \frac{7}{4}$
$\frac{4}{4}; \frac{1}{2}; \frac{1}{4}; \frac{3}{4}$	→	$\frac{1}{4}; \frac{1}{2}; \frac{3}{4}; \frac{4}{4}$

Egte Breuk: Teller is kleiner as die noemer.

$\frac{1}{4}$ Die breuk is **kleiner** as 1 hele.

Onegte Breuke: Teller is groter as die noemer

$\frac{6}{4}$ Die breuk is **groter** as 'n hele.

Gemengde Getal: Daar is 'n heelgetal saam met 'n breuk.

$$3\frac{1}{4}$$

Om onegte breuke te verander na gemengde getalle, is niks anders as deelsomme nie.

$$\frac{9}{4} = 2 \text{ res } 1 \quad \text{dus: } \frac{9}{4} = 2\frac{1}{4}$$

Oefening 2:

Datum : _____

(1) Verander die onegte breuke in gemengde getalle.

(1) $\frac{7}{4} = 1\frac{3}{4}$	(2) $\frac{9}{2} = 4\frac{1}{2}$	(3) $\frac{18}{5} = 3\frac{3}{5}$	(4) $\frac{27}{4} = 6\frac{3}{4}$
(5) $\frac{33}{4} = 8\frac{1}{4}$	(6) $\frac{25}{6} = 4\frac{1}{6}$	(7) $\frac{47}{6} = 7\frac{5}{6}$	(8) $\frac{40}{7} = 5\frac{5}{7}$
(9) $\frac{69}{8} = 8\frac{5}{8}$	(10) $\frac{50}{8} = 6\frac{2}{8}$	(11) $\frac{20}{9} = 2\frac{2}{9}$	(12) $\frac{147}{12} = 12\frac{3}{12}$
(13) $\frac{16}{5} = 3\frac{1}{5}$	(14) $\frac{13}{2} = 6\frac{1}{2}$	(15) $\frac{17}{4} = 4\frac{1}{4}$	(16) $\frac{19}{3} = 6\frac{1}{3}$
(17) $\frac{39}{6} = 6\frac{3}{6}$	(18) $\frac{45}{7} = 6\frac{3}{7}$	(19) $\frac{29}{2} = 14\frac{1}{2}$	(20) $\frac{100}{9} = 11\frac{1}{9}$
(21) $\frac{32}{15} = 2\frac{2}{15}$	(22) $\frac{30}{25} = 1\frac{5}{25}$	(23) $\frac{81}{20} = 4\frac{1}{20}$	(24) $\frac{112}{10} = 11\frac{2}{10}$
(25) $\frac{50}{12} = 4\frac{2}{12}$	(26) $\frac{65}{20} = 3\frac{5}{20}$	(27) $\frac{78}{11} = 7\frac{1}{11}$	(28) $\frac{32}{15} = 2\frac{2}{15}$
(29) $\frac{66}{15} = 4\frac{6}{15}$	(30) $\frac{56}{5} = 11\frac{1}{5}$	(31) $\frac{37}{4} = 9\frac{1}{4}$	(32) $\frac{21}{2} = 10\frac{1}{2}$
(33) $\frac{110}{25} = 4\frac{10}{25}$	(34) $\frac{38}{5} = 7\frac{3}{5}$	(35) $\frac{25}{3} = 8\frac{1}{3}$	(36) $\frac{50}{4} = 12\frac{2}{4}$
(37) $\frac{105}{25} = 4\frac{5}{25}$	(38) $\frac{38}{4} = 9\frac{2}{4}$	(39) $\frac{105}{20} = 5\frac{5}{20}$	(40) $\frac{46}{15} = 3\frac{1}{15}$

Oefening 3:

Datum: _____



$$2 \frac{1}{4} = \frac{9}{4} \quad (2 \times 4 + 1 = 9)$$

(1) Verander die gemengde getalle na onegte breuke.

(1) $1 \frac{1}{2} = \frac{3}{2}$	(2) $1 \frac{1}{3} = \frac{4}{3}$	(3) $1 \frac{1}{4} = \frac{5}{4}$	(4) $1 \frac{1}{5} = \frac{6}{5}$
(5) $3 \frac{1}{3} = \frac{10}{3}$	(6) $2 \frac{2}{3} = \frac{8}{3}$	(7) $2 \frac{3}{5} = \frac{13}{5}$	(8) $1 \frac{1}{9} = \frac{10}{9}$
(9) $2 \frac{3}{4} = \frac{11}{4}$	(10) $2 \frac{1}{9} = \frac{19}{9}$	(11) $3 \frac{1}{3} = \frac{10}{3}$	(12) $3 \frac{1}{8} = \frac{25}{8}$
(13) $1 \frac{1}{6} = \frac{7}{6}$	(14) $2 \frac{3}{7} = \frac{17}{7}$	(15) $25 \frac{1}{4} = \frac{101}{4}$	(16) $1 \frac{1}{8} = \frac{9}{8}$
(17) $1 \frac{2}{10} = \frac{12}{10}$	(18) $1 \frac{2}{6} = \frac{8}{6}$	(19) $1 \frac{3}{5} = \frac{8}{5}$	(20) $1 \frac{3}{4} = \frac{7}{4}$
(21) $5 \frac{1}{6} = \frac{31}{6}$	(22) $4 \frac{3}{8} = \frac{35}{8}$	(23) $9 \frac{3}{4} = \frac{39}{4}$	(24) $45 \frac{1}{2} = \frac{91}{2}$
(25) $3 \frac{4}{6} = \frac{22}{6}$	(26) $9 \frac{1}{5} = \frac{46}{5}$	(27) $6 \frac{3}{4} = \frac{27}{4}$	(28) $8 \frac{1}{8} = \frac{65}{8}$
(29) $5 \frac{3}{7} = \frac{38}{7}$	(30) $8 \frac{3}{5} = \frac{43}{5}$	(31) $11 \frac{3}{4} = \frac{47}{4}$	(32) $12 \frac{1}{7} = \frac{85}{7}$
(33) $7 \frac{1}{8} = \frac{57}{8}$	(34) $4 \frac{1}{8} = \frac{33}{8}$	(35) $9 \frac{1}{2} = \frac{19}{2}$	(36) $5 \frac{1}{3} = \frac{16}{3}$
(37) $4 \frac{1}{5} = \frac{21}{5}$	(38) $6 \frac{3}{8} = \frac{51}{8}$	(39) $7 \frac{3}{4} = \frac{31}{4}$	(40) $9 \frac{1}{8} = \frac{73}{8}$
(41) $2 \frac{1}{15} = \frac{31}{15}$	(42) $6 \frac{2}{9} = \frac{56}{9}$	(43) $9 \frac{2}{7} = \frac{65}{7}$	(44) $25 \frac{1}{3} = \frac{76}{3}$
(45) $15 \frac{1}{4} = \frac{61}{4}$	(46) $10 \frac{3}{8} = \frac{83}{8}$	(47) $8 \frac{3}{12} = \frac{99}{12}$	(48) $35 \frac{1}{2} = \frac{71}{2}$
(49) $2 \frac{1}{5} = \frac{11}{5}$	(50) $11 \frac{3}{12} = \frac{135}{12}$	(51) $12 \frac{2}{8} = \frac{98}{8}$	(52) $6 \frac{3}{8} = \frac{51}{8}$
(53) $3 \frac{1}{9} = \frac{28}{9}$	(54) $6 \frac{3}{6} = \frac{39}{6}$	(55) $2 \frac{7}{8} = \frac{23}{8}$	(56) $8 \frac{7}{8} = \frac{71}{8}$

Oefening B1C:

Datum: _____

2 x tot 12 x

Skryf slegs die antwoord neer:

(a) $11 \times 11 =$ 121

(b) $48 \div 8 =$ 6

(c) $3 \times 7 =$ 21

(d) $24 \div 6 =$ 4

(e) $3 \times 6 =$ 18

(f) $48 \div 8 =$ 6

(g) $3 \times 9 =$ 27

(h) $49 \div 7 =$ 7

(i) $12 \times 11 =$ 121

(j) $7 \times 7 =$ 49

Totaal:

(a) $21 \div 7 =$ 3

(b) $12 \times 9 =$ 108

(c) $25 \div 5 =$ 5

(d) $4 \times 8 =$ 32

(e) $42 \div 6 =$ 7

(f) $9 \times 8 =$ 72

(g) $108 \div 9 =$ 12

(h) $4 \times 7 =$ 28

(i) $30 \div 6 =$ 5

(j) $9 \times 4 =$ 32

Totaal:

(a) $12 \times 6 =$ 72

(b) $36 \div 3 =$ 12

(c) $9 \times 9 =$ 81

(d) $24 \div 8 =$ 3

(e) $9 \times 7 =$ 63

(f) $121 \div 11 =$ 11

(g) $6 \times 8 =$ 48

(h) $32 \div 8 =$ 4

(i) $11 \times 11 =$ 121

(j) $56 \div 8 =$ 7

Totaal:

(a) $5 \times 8 =$ 40

(b) $21 \div 7 =$ 3

(c) $12 \times 12 =$ 144

(d) $60 \div 5 =$ 12

(e) $4 \times 7 =$ 28

(f) $48 \div 4 =$ 12

(g) $27 \div 9 =$ 3

(h) $12 \times 7 =$ 84

(i) $40 \div 8 =$ 5

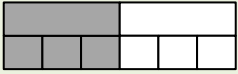
(j) $72 \div 6 =$ 12

Totaal:

Totaal uit 40:

B1.3 Ekwivalente breuke:**Oefening 4:**

Datum: _____

EKWIVALENTE BREUKE


$$\frac{1}{2} \times \frac{3}{3} = \frac{3}{6} \quad \text{daarom is: } \frac{1}{2} = \frac{3}{6}$$

**ONTHOU
DIE GOUE
REËL!**

(1) Skryf ekwivalente breuke neer.**GOUE REËL:** Wat jy bo doen moet jy onder doen.

(a) $\frac{1}{4} \times \frac{3}{3} = \frac{3}{12}$

(b) $\frac{1}{4} \times \frac{4}{4} = \frac{4}{16}$

(c) $\frac{1}{3} \times \frac{3}{3} = \frac{3}{9}$

(d) $\frac{4}{8} \times \frac{4}{4} = \frac{16}{32}$

(e) $\frac{4}{7} \times \frac{5}{5} = \frac{20}{35}$

(f) $\frac{3}{4} \times \frac{5}{5} = \frac{15}{20}$

(g) $\frac{3}{6} \times \frac{4}{4} = \frac{12}{24}$

(h) $\frac{5}{8} \times \frac{5}{5} = \frac{25}{40}$

(i) $\frac{3}{9} \times \frac{3}{3} = \frac{1}{3}$

(j) $\frac{4}{7} \times \frac{9}{9} = \frac{36}{63}$

(k) $\frac{3}{6} \times \frac{7}{7} = \frac{21}{42}$

(l) $\frac{2}{3} \times \frac{20}{20} = \frac{40}{60}$

(m) $\frac{4}{9} \times \frac{10}{10} = \frac{40}{90}$

(n) $\frac{2}{9} \times \frac{9}{9} = \frac{18}{81}$

(o) $\frac{1}{5} \times \frac{14}{14} = \frac{14}{70}$

(2) Skryf die breuke eers as onegte breuke en skryf dan die ekwivalente breuke neer.

(a) $2\frac{1}{3} = \frac{7}{3} \times \frac{4}{4} = \frac{28}{12}$

(b) $4\frac{1}{2} = \frac{9}{2} \times \frac{3}{3} = \frac{27}{6}$

(c) $1\frac{1}{3} = \frac{4}{3} \times \frac{7}{7} = \frac{28}{21}$

(d) $3\frac{1}{2} = \frac{7}{2} \times \frac{7}{7} = \frac{49}{14}$

(e) $7\frac{2}{4} = \frac{30}{4} \times \frac{3}{3} = \frac{90}{12}$

(f) $6\frac{4}{6} = \frac{40}{6} \times \frac{3}{3} = \frac{120}{18}$

(g) $3\frac{3}{4} = \frac{15}{4} \times \frac{4}{4} = \frac{60}{16}$

(h) $3\frac{1}{5} = \frac{16}{5} \times \frac{2}{2} = \frac{32}{10}$

(i) $8\frac{1}{5} = \frac{41}{5} \times \frac{2}{2} = \frac{82}{10}$

(j) $3\frac{2}{3} = \frac{11}{3} \times \frac{7}{7} = \frac{77}{21}$

(k) $3\frac{3}{4} = \frac{15}{4} \times \frac{3}{3} = \frac{45}{12}$

(l) $6\frac{2}{3} = \frac{20}{3} \times \frac{5}{5} = \frac{100}{15}$

(m) $6\frac{3}{7} = \frac{45}{7} \times \frac{2}{2} = \frac{90}{14}$

(n) $6\frac{1}{4} = \frac{25}{4} \times \frac{3}{3} = \frac{75}{12}$

(o) $2\frac{7}{9} = \frac{25}{9} \times \frac{3}{3} = \frac{75}{27}$

VEELVOUDE VAN GROTER GETALLE

Oefening B1D:

Datum: _____

(1) Skryf die eerste tien veelvoude van die volgende getalle neer:

15	15 ; 30 ; 45 ; 60 ; 75 ; 90 ; 105 ; 120 ; 135 ; 150
35	35 ; 70 ; 105 ; 140 ; 175 ; 210 ; 245 ; 280 ; 315 ; 350
25	25 ; 50 ; 75 ; 100 ; 125 ; 150 ; 175 ; 200 ; 225 ; 250
45	45 ; 90 ; 135 ; 180 ; 225 ; 270 ; 315 ; 360 ; 405 ; 450
125	125 ; 250 ; 375 ; 500 ; 625 ; 750 ; 875 ; 1 000 ; 1125 ; 1250

(2) Skryf slegs die antwoord neer.

(a) $3 \times 15 =$ <u>45</u>	(a) $5 \times 25 =$ <u>125</u>	(a) $4 \times 35 =$ <u>140</u>	(a) $6 \times 45 =$ <u>270</u>
(b) $9 \times 20 =$ <u>180</u>	(b) $5 \times 15 =$ <u>75</u>	(b) $3 \times 35 =$ <u>105</u>	(b) $2 \times 45 =$ <u>90</u>
(c) $6 \times 15 =$ <u>90</u>	(c) $3 \times 125 =$ <u>375</u>	(c) $4 \times 25 =$ <u>100</u>	(c) $10 \times 15 =$ <u>150</u>
(d) $3 \times 35 =$ <u>105</u>	(d) $6 \times 25 =$ <u>150</u>	(d) $6 \times 15 =$ <u>90</u>	(d) $8 \times 15 =$ <u>120</u>
(e) $5 \times 20 =$ <u>100</u>	(e) $8 \times 25 =$ <u>200</u>	(e) $8 \times 125 =$ <u>1 000</u>	(e) $4 \times 125 =$ <u>500</u>
(f) $10 \times 15 =$ <u>150</u>	(f) $6 \times 15 =$ <u>90</u>	(f) $2 \times 125 =$ <u>250</u>	(f) $9 \times 15 =$ <u>135</u>
(g) $3 \times 25 =$ <u>75</u>	(g) $6 \times 25 =$ <u>150</u>	(g) $2 \times 500 =$ <u>1 000</u>	(g) $1 \times 125 =$ <u>125</u>
(h) $0 \times 25 =$ <u>0</u>	(h) $10 \times 125 =$ <u>1250</u>	(h) $8 \times 35 =$ <u>280</u>	(h) $20 \times 20 =$ <u>400</u>
(i) $8 \times 25 =$ <u>200</u>	(i) $6 \times 20 =$ <u>120</u>	(i) $0 \times 25 =$ <u>0</u>	(i) $*25 \times 25 =$ <u>625</u>
(j) $*15 \times 15 =$ <u>225</u>	(j) $20 \times 35 =$ <u>700</u>	(j) $30 \times 15 =$ <u>450</u>	(j) $16 \times 125 =$ <u>2000</u>
Totaal: <input type="text"/>	Totaal: <input type="text"/>	Totaal: <input type="text"/>	Totaal: <input type="text"/>

Totaal uit 40:

B1.4 Vereenvoudiging van breuke:

Oefening 5:

Datum: _____

VEREENVOUDIGING VAN BREUKE

GGF van 28 en 32 = 4

$$\frac{28}{32} = \frac{y}{8} \quad \frac{28}{32} \div \frac{4}{4} = \frac{7}{8} \quad \text{daarom is } y = 7$$

(1) Bereken die waarde van die onbekende letter.

GEHEIM: Vind eers die GGF van die teller en die noemer.

<p>(1) $\frac{8}{16} = \frac{x}{4}$ GGF = 4</p> $\therefore \frac{8}{16} \div \frac{4}{4} = \frac{2}{4}$ <p>Daarom is $x = \underline{2}$</p>	<p>(2) $\frac{9}{30} = \frac{y}{10}$ GGF = 3</p> $\therefore \frac{9}{30} \div \frac{3}{3} = \frac{3}{10}$ <p>Daarom is $y = \underline{3}$</p>	<p>(3) $\frac{16}{40} = \frac{x}{5}$ GGF = 8</p> $\therefore \frac{16}{40} \div \frac{8}{8} = \frac{2}{5}$ <p>Daarom is $x = \underline{2}$</p>
<p>(4) $\frac{15}{35} = \frac{m}{7}$ GGF = 5</p> $\therefore \frac{15}{35} \div \frac{5}{5} = \frac{3}{7}$ <p>Daarom is $m = \underline{3}$</p>	<p>(5) $\frac{36}{48} = \frac{n}{4}$ GGF = 12</p> $\frac{36}{48} \div \frac{12}{12} = \frac{3}{4}$ <p>Daarom is $n = \underline{3}$</p>	<p>(6) $\frac{18}{81} = \frac{c}{9}$ GGF = 9</p> $\frac{18}{81} \div \frac{9}{9} = \frac{2}{9}$ <p>Daarom is $c = \underline{2}$</p>
<p>(7) $\frac{3}{18} = \frac{1}{x}$ GGF = 3</p> $\frac{3}{18} \div \frac{3}{3} = \frac{1}{6}$ <p>Daarom is $x = \underline{6}$</p>	<p>(8) $\frac{20}{45} = \frac{4}{m}$ GGF = 5</p> $\frac{20}{45} \div \frac{5}{5} = \frac{4}{9}$ <p>Daarom is $m = \underline{9}$</p>	<p>(9) $\frac{25}{125} = \frac{1}{k}$ GGF = 25</p> $\frac{25}{125} \div \frac{25}{25} = \frac{1}{5}$ <p>Daarom is $k = \underline{5}$</p>
<p>(10) $\frac{24}{64} = \frac{x}{8}$ GGF = 8</p> $\frac{24}{64} \div \frac{8}{8} = \frac{3}{8}$ <p>Daarom is $x = \underline{3}$</p>	<p>(11) $\frac{50}{90} = \frac{5}{m}$ GGF = 10</p> $\frac{50}{90} \div \frac{10}{10} = \frac{5}{9}$ <p>Daarom is $m = \underline{9}$</p>	<p>(12) $\frac{21}{28} = \frac{3}{k}$ GGF = 7</p> $\frac{21}{28} \div \frac{7}{7} = \frac{3}{4}$ <p>Daarom is $k = \underline{4}$</p>

VERMENIGVULDIGING (Groter getalle)

Oefening B1E:

Datum: _____

Skryf slegs die antwoord neer.

$$\begin{array}{r} \text{(a)} \quad 25 \\ \times 8 \\ \hline \end{array}$$

200

$$\begin{array}{r} \text{(b)} \quad 45 \\ \times 8 \\ \hline \end{array}$$

360

$$\begin{array}{r} \text{(c)} \quad 25 \\ \times 16 \\ \hline \end{array}$$

400

$$\begin{array}{r} \text{(d)} \quad 25 \\ \times 12 \\ \hline \end{array}$$

300

$$\begin{array}{r} \text{(e)} \quad 150 \\ \times 3 \\ \hline \end{array}$$

450

$$\begin{array}{r} \text{(f)} \quad 45 \\ \times 4 \\ \hline \end{array}$$

180

$$\begin{array}{r} \text{(g)} \quad 25 \\ \times 30 \\ \hline \end{array}$$

750

$$\begin{array}{r} \text{(h)} \quad 35 \\ \times 5 \\ \hline \end{array}$$

175

$$\begin{array}{r} \text{(i)} \quad 250 \\ \times 6 \\ \hline \end{array}$$

1 500

$$\begin{array}{r} \text{(j)} \quad 15 \\ \times 6 \\ \hline \end{array}$$

90

$$\begin{array}{r} \text{(k)} \quad 50 \\ \times 4 \\ \hline \end{array}$$

200

$$\begin{array}{r} \text{(l)} \quad 15 \\ \times 7 \\ \hline \end{array}$$

105

$$\begin{array}{r} \text{(m)} \quad 200 \\ \times 6 \\ \hline \end{array}$$

1 200

$$\begin{array}{r} \text{(n)} \quad 35 \\ \times 8 \\ \hline \end{array}$$

280

$$\begin{array}{r} \text{(o)} \quad 125 \\ \times 9 \\ \hline \end{array}$$

1 125

$$\begin{array}{r} \text{(p)} \quad 125 \\ \times 4 \\ \hline \end{array}$$

500

$$\begin{array}{r} \text{(q)} \quad 28 \\ \times 5 \\ \hline \end{array}$$

140

$$\begin{array}{r} \text{(r)} \quad 15 \\ \times 8 \\ \hline \end{array}$$

120

$$\begin{array}{r} \text{(s)} \quad 25 \\ \times 0 \\ \hline \end{array}$$

0

$$\begin{array}{r} \text{(t)} \quad 11 \\ \times 15 \\ \hline \end{array}$$

165

Totaal uit 20:

OM MET '11' TE VERMENIGVULDIG.

Om met 11 te vermenigvuldig: $23 \times 11 = 253$ (2 + 3 = 5 die middelste getal)

Omkring die veelvoude van 11.

297	392	231	374	197	198	385	111	495	484
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Wat gebeur in die volgende gevalle? (Sien verdere oefeninge op bl. 104)

$$253 \times 11 = 2783$$

$$117 \times 11 = 1287$$

Gebruik 'n sakrekenaar om die geheim te ontsluit.

<p>(13) $\frac{14}{21} = \frac{c}{3}$ GGF = <u>7</u></p> <p>$\frac{14}{21} \div \frac{7}{7} = \frac{2}{3}$</p> <p>Daarom is $c = 2$</p> <p>_____</p>	<p>(14) $\frac{12}{15} = \frac{c}{5}$ GGF = <u>3</u></p> <p>$\frac{12}{15} \div \frac{3}{3} = \frac{4}{5}$</p> <p>Daarom is $c = 4$</p> <p>_____</p>	<p>(15) $\frac{8}{12} = \frac{c}{3}$ GGF = <u>4</u></p> <p>$\frac{8}{12} \div \frac{4}{4} = \frac{2}{3}$</p> <p>Daarom is $c = 2$</p> <p>_____</p>
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B1.5 Bewerking met breuke:

B1.5.1 Vergelyking van breuke met verkillende noemers:

KGN = Kleinste Gemeenskaplike Noemer / KGV = Kleinste Gemeenskaplike Veelvoud

<p>$\frac{1}{4}$ en $\frac{2}{3}$</p> <p>KGV (KGN) = 12</p> <p>$\frac{1}{4} \times \frac{3}{3} = \frac{3}{12}$ en $\frac{2}{3} \times \frac{4}{4} = \frac{8}{12}$ daarom is $\frac{1}{4} < \frac{2}{3}$</p>	<p>Veelvoude van:</p> <p>4: 4; 8; 12; 16 ...</p> <p>3: 3; 6; 9; 12; 15 ...</p>
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Oefening 6:

Datum: _____

Maak die noemers dieselfde. Vul dan in $<$, $>$ of $=$:

<p>(1) $\frac{2}{5}$ en $\frac{1}{2}$</p> <p>KGV = <u>10</u></p> <p>$\frac{2}{5} \times \frac{2}{2} \square \frac{1}{2} \times \frac{5}{5}$</p> <p>$\frac{4}{10} < \frac{5}{10}$ $\left(\frac{2}{5} < \frac{1}{2}\right)$</p>	<p>(2) $\frac{1}{4}$ en $\frac{2}{16}$</p> <p>KGV = <u>16</u></p> <p>$\frac{1}{4} \times \frac{4}{4} \square \frac{2}{16}$</p> <p>$\frac{4}{16} > \frac{2}{16}$</p>	<p>(3) $\frac{4}{6}$ en $\frac{1}{3}$</p> <p>KGV = <u>6</u></p> <p>$\frac{4}{6} \square \frac{1}{3} \times \frac{2}{2}$</p> <p>$\frac{4}{6} > \frac{2}{6}$</p>
<p>(4) $\frac{3}{8}$ en $\frac{3}{4}$</p> <p>KGV = <u>8</u></p> <p>$\frac{3}{8} \square \frac{3}{4} \times \frac{2}{2}$</p> <p>$\frac{3}{8} < \frac{6}{8}$</p>	<p>(5) $\frac{1}{6}$ en $\frac{3}{5}$</p> <p>KGV = <u>30</u></p> <p>$\frac{1}{6} \times \frac{5}{5} \square \frac{3}{5} \times \frac{6}{6}$</p> <p>$\frac{5}{30} < \frac{18}{30}$</p>	<p>(6) $\frac{1}{2}$ en $\frac{2}{4}$</p> <p>KGV = <u>4</u></p> <p>$\frac{1}{2} \times \frac{2}{2} \square \frac{2}{4}$</p> <p>$\frac{2}{4} = \frac{2}{4}$</p>

DELING

Oefening B1F:

Datum: _____

Skryf die antwoord onder die getal neer.

(1) Hoeveel twee's is in elke getal?

116	248	400	164	1 100	158	500	356	650
58	124	200	82	550	79	250	178	325

(2) Hoeveel keer sal elf in elke getal kan indeel?

363	297	121	352	671	374	363	792	*1089
33	27	11	32	61	34	33	72	99

(3) Hoeveel keer sal vyftien in elke getal kan indeel?

30	90	150	60	45	105	180	1 500	15 000
2	6	10	4	3	7	12	100	1 000

(4) Hoeveel keer sal vyf-en-twintig in elke getal kan indeel?

75	50	100	200	275	150	500	1 000	10 000
3	2	4	8	11	6	20	40	400

Totaal uit 36:

(7) $\frac{1}{3}$ en $\frac{2}{6}$

KGV = 6

$\frac{1}{3} \times \frac{2}{2} \square \frac{2}{6}$

$\frac{2}{6} = \frac{2}{6}$

(8) $\frac{4}{7}$ en $\frac{1}{3}$

KGV = 21

$\frac{4}{7} \times \frac{3}{3} \square \frac{1}{3} \times \frac{7}{7}$

$\frac{12}{21} > \frac{7}{21}$

(9) $\frac{2}{4}$ en $\frac{5}{6}$

KGV = 12

$\frac{2}{4} \times \frac{3}{3} \square \frac{5}{6} \times \frac{2}{2}$

$\frac{6}{12} < \frac{10}{12}$

(10) $\frac{4}{6}$ en $\frac{5}{7}$

KGV = 42

$\frac{4}{6} \times \frac{7}{7} \square \frac{5}{7} \times \frac{6}{6}$

$\frac{28}{42} < \frac{30}{42}$

(11) $\frac{2}{5}$ en $\frac{1}{2}$

KGV = 10

$\frac{2}{5} \times \frac{2}{2} \square \frac{1}{2} \times \frac{5}{5}$

$\frac{4}{10} < \frac{5}{10}$

(12) $\frac{2}{5}$ en $\frac{3}{6}$

KGV = 30

$\frac{2}{5} \times \frac{6}{6} \square \frac{3}{6} \times \frac{5}{5}$

$\frac{12}{30} < \frac{15}{30}$

(13) $\frac{3}{4}$ en $\frac{2}{6}$

KGV = 12

$\frac{3}{4} \times \frac{3}{3} \square \frac{2}{6} \times \frac{2}{2}$

$\frac{9}{12} > \frac{4}{12}$

(14) $\frac{2}{7}$ en $\frac{1}{5}$

KGV = 35

$\frac{2}{7} \times \frac{5}{5} \square \frac{1}{5} \times \frac{7}{7}$

$\frac{10}{35} > \frac{7}{35}$

(15) $\frac{2}{45}$ en $\frac{3}{15}$

KGV = 45

$\frac{2}{45} \square \frac{3}{15} \times \frac{3}{3}$

$\frac{2}{45} < \frac{9}{45}$

(16) $\frac{7}{16}$ en $\frac{3}{4}$

KGV = 16

$\frac{7}{16} \square \frac{3}{4} \times \frac{4}{4}$

$\frac{7}{16} < \frac{12}{16}$

(17) $\frac{3}{5}$ en $\frac{1}{4}$

KGV = 20

$\frac{3}{5} \times \frac{4}{4} \square \frac{1}{4} \times \frac{5}{5}$

$\frac{12}{20} > \frac{5}{20}$

(18) $\frac{7}{10}$ en $\frac{2}{4}$

KGV = 20

$\frac{7}{10} \times \frac{2}{2} \square \frac{2}{4} \times \frac{5}{5}$

$\frac{14}{20} > \frac{10}{20}$

(19) $\frac{2}{8}$ en $\frac{3}{6}$

KGV = 24

$\frac{2}{8} \times \frac{3}{3} \square \frac{3}{6} \times \frac{4}{4}$

$\frac{6}{24} < \frac{12}{24}$

(20) $\frac{3}{15}$ en $\frac{2}{4}$

KGV = 60

$\frac{3}{15} \times \frac{4}{4} \square \frac{2}{4} \times \frac{15}{15}$

$\frac{12}{60} < \frac{30}{60}$

(21) $\frac{5}{35}$ en $\frac{10}{70}$

KGV = 70

$\frac{5}{35} \times \frac{2}{2} \square \frac{10}{70}$

$\frac{10}{70} = \frac{10}{70}$

B1.5.2 Optel van breuke:**Oefening 7:**

Datum: _____

$$\begin{aligned} & \frac{2}{3} + \frac{4}{6} \\ &= \frac{2}{3} \times \frac{2}{2} + \frac{4}{6} \\ &= \frac{4}{6} + \frac{4}{6} \text{ of } \frac{4+4}{6} \\ &= \frac{8}{6} \quad (\text{Vereenvoudig}) \\ &= 1 \frac{2}{6} \quad (\text{Vereenvoudig}) \\ &= 1 \frac{1}{3} \end{aligned}$$

$$\begin{aligned} (1) \quad & \frac{2}{4} + \frac{1}{8} \\ &= \frac{\cancel{2}^1 \times \cancel{2}^1}{\cancel{4}^2} + \frac{1}{8} \\ &= \frac{1}{2} + \frac{1}{8} \\ &= \frac{4}{8} + \frac{1}{8} \\ &= \frac{5}{8} \\ &= \end{aligned}$$

$$\begin{aligned} (2) \quad & \frac{1}{5} + \frac{3}{10} \\ &= \frac{1}{5} \times \frac{2}{2} + \frac{3}{10} \\ &= \frac{2}{10} + \frac{3}{10} \\ &= \frac{5}{10} \\ &= \frac{1}{2} \quad (\text{Vereenvoudig}) \end{aligned}$$

$$\begin{aligned} (3) \quad & \frac{10}{15} + \frac{2}{5} \\ &= \frac{10}{15} + \frac{2}{5} \times \frac{3}{3} \\ &= \frac{10}{15} + \frac{6}{15} \\ &= \frac{16}{15} \\ &= 1 \frac{1}{15} \quad (\text{Vereenvoudig}) \end{aligned}$$

$$\begin{aligned} (4) \quad & \frac{1}{4} + \frac{3}{8} \\ &= \frac{1}{4} \times \frac{2}{2} + \frac{3}{8} \\ &= \frac{2}{8} + \frac{3}{8} \\ &= \frac{5}{8} \end{aligned}$$

$$\begin{aligned} (5) \quad & \frac{2}{6} + \frac{1}{3} \\ &= \frac{2}{6} + \frac{1}{3} \times \frac{2}{2} \\ &= \frac{2}{6} + \frac{2}{6} \\ &= \frac{4}{6} \\ &= \frac{2}{3} \quad (\text{Vereenvoudig}) \end{aligned}$$

$$\begin{aligned} (6) \quad & \frac{2}{3} + \frac{4}{9} \\ &= \frac{2}{3} \times \frac{3}{3} + \frac{4}{9} \\ &= \frac{6}{9} + \frac{4}{9} \\ &= \frac{10}{9} \\ &= 1 \frac{1}{9} \quad (\text{Vereenvoudig}) \end{aligned}$$

$$\begin{aligned} (7) \quad & \frac{9}{12} + \frac{3}{4} \\ &= \frac{9}{12} + \frac{3}{4} \times \frac{3}{3} \\ &= \frac{9}{12} + \frac{9}{12} \\ &= \frac{18}{12} \\ &= 1 \frac{6}{12} = 1 \frac{1}{2} \quad (\text{Vereenvoudig}) \end{aligned}$$

$$\begin{aligned} (8) \quad & \frac{7}{15} + \frac{4}{5} \\ &= \frac{7}{15} + \frac{4}{5} \times \frac{3}{3} \\ &= \frac{7}{15} + \frac{12}{15} \\ &= \frac{19}{15} \\ &= 1 \frac{4}{15} \quad (\text{Vereenvoudig}) \end{aligned}$$

$$\begin{aligned} (9) \quad & \frac{12}{25} + \frac{3}{5} \\ &= \frac{12}{25} + \frac{3}{5} \times \frac{5}{5} \\ &= \frac{12}{25} + \frac{15}{25} \\ &= \frac{27}{25} \\ &= 1 \frac{2}{25} \quad (\text{Vereenvoudig}) \end{aligned}$$

$$\begin{aligned} (10) \quad & \frac{15}{30} + \frac{6}{15} \\ &= \frac{15}{30} + \frac{6}{15} \times \frac{2}{2} \\ &= \frac{15}{30} + \frac{12}{30} \\ &= \frac{27}{30} \\ &= \frac{9}{10} \quad (\text{Vereenvoudig}) \end{aligned}$$

$$\begin{aligned} (11) \quad & \frac{15}{30} + \frac{9}{10} \\ &= \frac{15}{30} + \frac{9}{10} \times \frac{3}{3} \\ &= \frac{15}{30} + \frac{27}{30} \\ &= \frac{42}{30} \\ &= 1 \frac{12}{30} = 1 \frac{2}{5} \quad (\text{Vereenvoudig}) \end{aligned}$$

$$(12) \frac{9}{15} + \frac{1}{5}$$

$$= \frac{9}{15} + \frac{1}{5} \times \frac{3}{3}$$

$$= \frac{9}{15} + \frac{3}{15}$$

$$= \frac{12}{15} = \frac{4}{5}$$

$$(13) \frac{4}{8} + \frac{3}{16}$$

$$= \frac{4}{8} \times \frac{2}{2} + \frac{3}{16}$$

$$= \frac{8}{16} + \frac{3}{16}$$

$$= \frac{11}{16}$$

$$(14) \frac{4}{12} + \frac{2}{4}$$

$$= \frac{4}{12} + \frac{2}{4} \times \frac{3}{3}$$

$$= \frac{4}{12} + \frac{6}{12}$$

$$= \frac{10}{12} = \frac{5}{6}$$

'n Atleet hardloop $\frac{1}{4}$ van die marathon op 'n Maandag en $\frac{3}{8}$ op 'n Dinsdag.

(a) Watter breukdeel van die marathon het hy gehardloop?

(b) Watter breukdeel van die marathon moet hy nog hardloop?

Skryf eers die getaltesin:

(a)

$$\frac{1}{4} + \frac{3}{8}$$

$$= \frac{1}{4} \times \frac{2}{2} + \frac{3}{8}$$

$$= \frac{2}{8} + \frac{3}{8}$$

$$= \frac{5}{8}$$

(b)

$$\frac{8}{8} - \frac{5}{8}$$

$$= \frac{8}{8} - \frac{5}{8}$$

$$= \frac{3}{8}$$

Onthou:

$$\frac{8}{8} = 1 \text{ hele marathon}$$

Oefening 8:

Datum: _____

NOG OPTELLING!

Tel die breuke op. Vereenvoudig waar moontlik.

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

$$= \frac{1}{3} \times \frac{5}{5} + \frac{1}{5} \times \frac{3}{3}$$

$$= \frac{5}{15} + \frac{3}{15} \text{ of } \frac{5+3}{15}$$

$$= \frac{8}{15}$$

$$(1) \frac{2}{3} + \frac{3}{4}$$

$$= \frac{2}{3} \times \frac{4}{4} + \frac{3}{4} \times \frac{3}{3}$$

$$= \frac{8}{12} + \frac{9}{12}$$

$$= \frac{17}{12} = 1 \frac{5}{12}$$

$$(2) \frac{3}{7} + \frac{4}{5}$$

$$= \frac{3}{7} \times \frac{5}{5} + \frac{4}{5} \times \frac{7}{7}$$

$$= \frac{15}{35} + \frac{28}{35}$$

$$= \frac{43}{35} = 1 \frac{8}{35}$$

