

Wiskunde voor vrijescholen

Antwoorden Klas 8

B.Geels

14 juli 2021

1 Algebra

- | | | |
|-----|--------------|---------|
| 1-1 | a. 137 | e. 106 |
| | b. 540 | f. 144 |
| | c. 100 | g. 14 |
| | d. 201 | h. 68 |
| 1-2 | a. 505 | e. 7446 |
| | b. 84 | f. 169 |
| | c. 1266 | g. 300 |
| | d. 15 | h. 160 |
| 1-3 | a. 800 | e. 805 |
| | b. 299 | f. 7961 |
| | c. 39 | g. 1800 |
| | d. 113 | h. 90 |
| 1-4 | a. 644 | e. 12 |
| | b. 675 | f. 137 |
| | c. 196 | g. 512 |
| | d. 800 | h. 1170 |
| 1-5 | a. 21026 | e. 771 |
| | b. 1611 | f. 75 |
| | c. 90 | g. 1150 |
| | d. 146 | h. 488 |
| 1-6 | a. 6.699.984 | |
| | b. 541 | |
| | c. 475006 | |
| | d. 66 | |
| | e. 125 | |
| | f. 1010100 | |
| | g. 28200 | |
| | h. 128 | |

- | | | |
|-----|----------|---------|
| 1-7 | a. 515 | e. 193 |
| | b. 75 | f. 133 |
| | c. 14620 | g. 1470 |
| | d. 999 | h. 6250 |

- | | | | | |
|-----|----------------|----------------|----------------|--------------------------|
| 1-8 | a. $-15 - 10a$ | c. $-2a + 4b$ | e. $-3a - 12b$ | g. $-3a + 1\frac{1}{2}b$ |
| | b. $-9a + 18b$ | d. $-12a + 18$ | f. $25 - 25a$ | h. $-3 - 15a$ |

- | | | | | |
|-----|------------------|-----------------|--------------|-----------------|
| 1-9 | a. $-5a^2 + 5pq$ | c. $6a^2b - 6$ | e. $6c - 8d$ | g. $-4ab + 4pq$ |
| | b. $-ab + 3pq$ | d. $5a^2 - 5bc$ | f. $5 + 20z$ | h. $-3 - 12z^2$ |

- | | | | | |
|------|--------------|-------------|--------------|--------------|
| 1-10 | a. $-3a + 3$ | c. $3 - 3a$ | e. $-3 - 9a$ | g. $3a - 3b$ |
| | b. $-3a + 6$ | d. $a - b$ | f. $9a + 3$ | h. $9a - 3$ |

- | | | | | |
|------|----------------|------------------------------------|-----------------|---------------|
| 1-11 | a. $4a^2 + 12$ | c. $-\frac{1}{2}a^2 + \frac{1}{3}$ | e. $3a - 18b^2$ | g. $-a - b$ |
| | b. $-2a + 2b$ | d. $3a^2 + 6b^2$ | f. $4a - 8b$ | h. $-4a + 8b$ |

- | | | | | |
|------|---------------------|---------------------|------------------------|----------------|
| 1-12 | a. $4a + 8b^2 + 4c$ | c. $21c + 3z - 3$ | e. $-a + \frac{1}{2}c$ | g. $-6a + 12c$ |
| | b. $5p + 5q - 25$ | d. $-7a - 42b + 21$ | f. $4 + 8c - 12d$ | h. $12a - 6$ |

- | | | | | |
|------|----------------|------------------|----------------|----------------|
| 1-13 | a. $ap + aq$ | c. $ap - aq$ | e. $2a^2 + aq$ | g. $2ap - aq$ |
| | b. $2ap + 3aq$ | d. $-2p^2 + 3aq$ | f. $2a + 3ac$ | h. $-3a + 2ac$ |

- | | | |
|------|------------------------|------------------------|
| 1-14 | a. $2a - 6ac$ | e. $15a^2 + 10ad^2$ |
| | b. $3ac - 6cd$ | f. $6ad - 15d^3$ |
| | c. $4az - 8bz$ | g. $3az + 6z^2$ |
| | d. $-4kp + 12kq^2$ | h. $-8kp - 20kz$ |
| 1-15 | a. $4ab - 6abc$ | e. $-3bcx + 6bcy$ |
| | b. $-8xy + 4x^3y$ | f. $-6x^2 + 12tx^2$ |
| | c. $8a^2b - 10aby$ | g. $a^2bc - 3a^2bd$ |
| | d. $-2x^2yz^2 + 3x^2y$ | h. $-2x^2yz^2 - 3x^3y$ |

- | | | | | |
|-------------|---|---|--|---|
| 1-16 | a. $2a + 4ab + 6ac$
b. $a^2 - 2a^2b + 3a^2c$
c. $xy^2 - 3x^2y^2 + 4y^2$
d. $-ab + abc + abd$ | e. $a - 2ap - 3aq$
f. $xy^2 - 3x^2y^2 + 4y^2$
g. $x^2z^2 + y^2z^2$
h. $9xy + 9xz - 9x$ | | |
| 1-17 | a. $3(x + 2)$
b. $4(4a - 5b)$ | c. $3(x + 4)$
d. $16(a - 1)$ | e. $3(x + 1)$
f. $8(-a + 3)$ | g. $3(2a + 3b)$
h. $6(-a + 4)$ |
| 1-18 | a. $25x(c - y)$
b. $20x(5y - 1)$
c. $20(5x - y)$
d. $3xy(-2z + 1)$ | e. $25y(c - x)$
f. $2p(9q + 16y)$
g. $3xy(z - 2)$
h. $22xy(2z - 3t)$ | | |
| 1-19 | a. $x(x + 3)$
b. $3x(x - 2)$
c. $3x(2x - 1)$
d. $2x^2(2x + 1)$ | e. $x(x - 6)$
f. $3x(-2x + 1)$
g. $3(2x^2 - 1)$
h. $5x(x - 2)$ | | |
| 1-20 | a. $8(x + y)$
b. $9x^2y^2(x + 3y)$
c. $10xy(16x + 15y^2)$
d. $2x^2(4x^2 + 4x + 3y)$ | e. $7c^2d(-3c + 2d)$
f. $9x^2y(2y^2 + 3)$
g. $3x^2(2x - 3y + 1)$
h. $4x^7y^3(-2x + z)$ | | |
| 1-21 | a. $ab + ad + bc + cd$
b. $3a + ac + 3b + bc$ | c. $ap + aq + bp + bq$
d. $ab + ac + 3b + 3c$ | e. $ce + cf + de + df$
f. $3a + ad + 3b + bd$ | |
| 1-22 | a. $x^2 + x - 6$
b. $p^2 + 5p + 6$ | c. $x^2 + 6x + 5$
d. $p^2 - 3p + 2$ | e. $x^2 + 7x + 6$
f. $y^2 + 10y + 21$ | |
| 1-23 | a. $6pt + 4pv + 3qt + 2v^2$
b. $k^2 + 6k + 5$ | c. $6pt + 4p - 3qt - 2q$
d. $2ac + 2ad + bc + bd$ | e. $y^2 - 6y - 16$
f. $4ac + 2ad + 2bc + bd$ | |
| 1-24 | a. $10ab + 15a + 8b + 12$
b. $6 + 17a + 12a^2$ | c. $4ax - 8bx + ay - 2by$
d. $-6a^2 - a + 1$ | e. $4xy - 4xz - 4y + 4z$
f. $4p + 2pt + 12t + 6t^2$ | |
| 1-25 | a. $(x + 2)(x + 3)$
b. $(x + 2)(x + 4)$ | c. $(x + 1)(x + 4)$
d. $(x + 8)(x + 1)$ | e. $(x + 1)(x + 6)$
f. $(x + 2)(x + 6)$ | |

- | | | | |
|------|--------------------------------|-----------------------------|--|
| 1-26 | a. $(x - 2)(x - 7)$ | c. $(x - 1)(x - 14)$ | e. $(x - 1)^2$ |
| | b. $(a - 3)(a - 5)$ | d. $(a - 1)(a - 15)$ | f. $(a - 1)(a - 18)$ |
| 1-27 | a. $(x - 10)(x + 3)$ | c. $(x + 10)(x - 3)$ | e. $(x - 15)(x + 2)$ |
| | b. $(x + 15)(x - 2)$ | d. $(x - 6)(x + 5)$ | f. $(x - 30)(x + 1)$ |
| 1-28 | a. $(x + 3)(x + 4)$ | c. $(x + 12)(x + 1)$ | e. $(x - 2)(x - 9)$ |
| | b. $(x - 3)(x - 6)$ | d. $(x + 30)(x - 1)$ | f. $(x - 8)(x + 2)$ |
| 1-29 | a. $(x + 9)(x - 4)$ | c. $(x - 6)(x + 3)$ | e. $(x - 3)(x - 7)$ |
| | b. $(x - 9)(x + 8)$ | d. $(x - 1)(x - 6)$ | f. $(x - 5)(x - 6)$ |
| 1-30 | a. $(x - 5)^2$ | c. $(x + 5)^2$ | e. $(x - 3)(x - 5)$ |
| | b. $(x - 7)(x - 5)$ | d. $(x + 7)^2$ | f. $(x - 9)(x + 6)$ |
| 1-31 | a. $x^2 + 10x + 25$ | c. $x^2 + 20x + 100$ | e. $4x^2 - 16x + 16$ |
| | b. $x^2 - 10x + 25$ | d. $x^2 - 25$ | f. $4x^2 - 36$ |
| 1-32 | a $a^2 + 2ab + b^2$ | c $p^2 + 2pq + q^2$ | e $144 + 24q + q^2$ |
| | b $a^2 + 8a + 16$ | d $9 + 6q + q^2$ | f $a^2 + \frac{2}{3}a + \frac{1}{9}$ |
| 1-33 | a $x^2 + 2x + 1$ | c $x^2 + 20x + 100$ | e $x^2 + 22x + 121$ |
| | b $z^2 + 18z + 81$ | d $z^2 + 18z + 81$ | f $y^2 + 6y + 9$ |
| 1-34 | a $x^2 - 4xy + 4y^2$ | c $4x^2 - 4xy + y^2$ | e $4x^2 - 24x + 36$ |
| | b $4x^2 - 4x + 1$ | d $4x^2 - 8x + 4$ | f $4x^2 - 12x + 9$ |
| 1-35 | a $9x^2 - 6x + 1$ | c $9x^2 - 6x + 1$ | e $16x^2 - 40xy + 25y^2$ |
| | b $4y^2 - 20xy + 25x^2$ | d $9x^2 - 60x + 100$ | f $x^2 - 6xy + 9y^2$ |
| 1-36 | a $4x^2 - 12x + 9$ | c $16x^2 + 40x + 25$ | e $x^2 - 6y + 9y^2$ |
| | b $0,01 + 0,2y + y^2$ | d $12\frac{1}{4}$ | f 10201 |
| | | | g $\frac{1}{9}x^2 + \frac{14}{3}x + 49$ |
| | | | h $x^2 - \frac{1}{3}xy + \frac{4}{9}$ |

1-37	a. $(a + b)^2$	c. $(a + 2b)^2$	e. $(a + 5b)^2$
	b. $(a + 5)^2$	d. $(a + 6)^2$	f. $(x + 4)^2$
1-38	a. $(x + 4y)^2$	c. $(x - 4y)^2$	e. $(y + 3)^2$
	b. $(y + 5)^2$	d. $(8 + x)^2$	f. $(x - 1)^2$
1-39	a. $(x + 2y)^2$	c. $(7 - x)^2$	e. $(p + 15q)^2$
	b. $(4a + 1)^2$	d. $(3x - y)^2$	f. $(2x + 5y)^2$
1-40	a. $(2x - 5y)^2$	c. $(2x - 3y)^2$	e. $(2x + 7y)^2$
	b. $(3a - 5b)^2$	d. $(3a + 4c)^2$	f. $(11x + 1)^2$
1-41	a. $(4 - 5t)^2$	c. $(2x + 3y)^2$	e. $(2 - 3y)^2$
	b. $(12a - 1)^2$	d. $(9x - 7)^2$	f. $(a^2 + 1)^2$
1-42	a. ja	c. nee, $25 \neq 2 \times 12$	e. nee
	b. nee, -36	d. ja	f. ja
			g. ja
			h. ja
1-43	a. $2\frac{1}{4}$	c. $110\frac{1}{4}$	e. 56, 25
	b. 20, 25	d. $\frac{1}{4}$	f. $90\frac{1}{4}$
1-44	a. $a^2 - 4$	c. $a^2 - 36$	e. $a^2 - 36$
	b. $36 - a^2$	d. $x^2 - 1$	f. $1 - x^2$
1-45	a. $x^2 - y^2$	c. $a^2 - 49$	e. $a^2 - \frac{1}{4}$
	b. $-a^2 + 9$	d. $-b^2 + 25$	f. $t^2 - 64$
1-46	a. $t^2 - 100$	c. $v^2 - w^2$	e. $c^2 - d^2$
	b. $k^2 - 100$	d. $9a^2 - b^2$	f. $25x^2 - y^2$
1-47	a. $4a^2 - 9$	c. $4a^2 - 16$	e. $4a^2 - 1$
	b. $9a^2 - 4$	d. $25a^2 - 49$	f. $-25a^2 + 81$
1-48	a. $a^2 - 4b^2$	c. $-4b^2 + 9$	e. $-4b^2 + 1$
	b. $36a^2 - 25$	d. $-49y^2 + 1$	f. $36a^2 - 25y^2$
1-49	a. $4x^2 - 9y^2$	c. $-4t^2 + 16z^2$	e. $64x^2 - 9y^2$
	b. $25a^2 - 9b^2$	d. $x^4 - 16$	f. $x^4 - 1$
1-50	a. $-x^2y^2 + 1$	c. $9t^2 - y^4$	e. $-x^4 + 64$
	b. $-x^4 + 9$	d. $a^2b^2 - c^2d^2$	f. $4a^2 - c^2d^2$

- | | | | | |
|-------------|--|--|--|------------------------------------|
| 1-51 | a. $x^4 - y^2$ | d. $x^4 - 4y^2$ | | |
| | b. $x^6 - y^2$ | e. $x^6 - 25y^2$ | | |
| | c. $a^2b^4 - a^4b^2$ | f. $-9q^6 + p^2q^4$ | | |
| 1-52 | a. $a^4 - b^4$ | c. $\frac{1}{9}a^6 - \frac{1}{4}$ | e. $25a^8 - 16$ | |
| | b. $a^6 - 1$ | d. $a^4 - a^2b^2$ | f. $x^{16} - \frac{1}{16}$ | |
| 1-53 | a. $a^2 - 16$ | c. $x^2 - 4$ | e. $x^6 - 9$ | |
| | b. $-a^4 + 25$ | d. $-x^2 + 1$ | f. $400 - 1 = 399$ | |
| 1-54 | a. $35\frac{3}{4}$ | c. 24, 96 | e. $8\frac{77}{81}$ | |
| | b. $8\frac{7}{16}$ | d. 384 | f. 224 | |
| 1-55 | a. $79\frac{1}{81}$ | c. $34\frac{1}{36}$ | e. $35\frac{21}{25}$ | |
| | b. 399 | d. $8\frac{15}{16}$ | f. $23\frac{1}{25}$ | |
| 1-56 | a. 1521 | c. 896 | e. $30\frac{1}{4}$ | g. $38\frac{1}{36}$ |
| | b. $23\frac{1}{25}$ | d. 9999 | f. 10201 | h. 2496 |
| 1-57 | a. $123\frac{1}{121}$ | c. $29\frac{4}{25}$ | e. 4899 | g. $72\frac{1}{4}$ |
| | b. $171\frac{1}{169}$ | d. $119\frac{1}{121}$ | f. 3.999.996 | h. $898\frac{1}{900}$ |
| 1-58 | a. $(x + y)(x - y)$ | c. $(2x + y)(2x - y)$ | e. $3x + 2y)(3x - 2y)$ | g. $(x^2 + y^3)(x^2 - y^3)$ |
| | b. $(2a + 4b)(2a - 4b)$ | d. $3(x + 1)(x - 1)$ | f. $x + 18)(x - 18)$ | h. $(a + bc)(a - bc)$ |
| 1-59 | a. $(x - \frac{1}{2})(x + \frac{1}{2})$ | c. $(x^2 + \frac{1}{4})(x^2 - \frac{1}{4})$ | e. $(\frac{1}{2}a + b)(\frac{1}{2}a - b)$ | |
| | b. $(\frac{x}{a} + 1)(\frac{x}{a} - 1)$ | d. $(\frac{x^3}{4} + \frac{1}{2})(\frac{x^3}{4} - \frac{1}{2})$ | f. $(p^2 + \frac{1}{2}q)(p^2 - \frac{1}{2}q)$ | |
| 1-60 | a. $3x(x - 2)$ | c. $3(x + 1)(x - 1)$ | e. $(p + 2q)(p + 5q)$ | g. $4(a + 2b)(a - 2b)$ |
| | b. $(3x - 1)^2$ | d. $(c + 5)(c - 10)$ | f. $7(x^2 + 7)$ | h. $4(x^2 + 9)$ |
| 1-61 | a. $x(x + 1)(x - 1)$ | c. $x^2(x - 1)$ | e. $x(x - 2)(x + 1)$ | g. $(y + 2x)^2$ |
| | b. $y^2(x + 2)(x - 2)$ | d. $3(a + 5)(a - 1)$ | f. $xy^2(y - 1)(y + 1)$ | h. $(t - 10)(t + 4)$ |

1-62

a. $3x^2y(1 - 3xy)$	c. $2(2 - z)(2 + z)$	e. $3(x + 1)(x + 2)$	g. $(x + 3)^2$
b. $(x + 11)(x - 5)$	d. $6a(1 - b)$	f. $6a(1 - b)(1 + b)$	h. $3(x - 1)^2$

1-63

a. $x^2y^2 + 2abxy + a^2b^2$	c. $9x^2y^2 - 24x^2yz + 16x^2z^2$	e. $9x^2y^2 - 24x^2y + 16x^2$	g. $16x^2 + 2x^2y + \frac{1}{16}x^2y^2$
b. $9x^4 - 2x^2 + \frac{1}{9}$	d. $a^6 - 2a^4b + a^2b^2$	f. $x^6 - 2x^3y^3 + y^6$	h. $4x^8 + 2x^6 + \frac{1}{4}x^4$

1-64

a. $x^6 - 0,01x^2$	e. $\frac{1}{9}x^2y^6 - z^8$
b. $a^{2n} - 1$	f. $a^{6n} - 9$
c. $a^{2n-2} - 4$	g. $a^{2n} - b^{2m}$
d. $9a^{2n} - a^4$	h. $25a^{2p} - p^2a^{10}$

1-65

a. $\frac{1}{4}a^4 + \frac{1}{2}a^3b + \frac{1}{4}a^2b^2$	c. $x^3 + 2x + \frac{1}{x}$	e. $x^2 - 2 + \frac{1}{x^2}$	g. $x^4 + 2x^2 + 1$
b. $\frac{1}{x} - 2 + x$	d. $\frac{1}{x^2} + \frac{2}{xy} + \frac{1}{y^2}$	f. $\frac{4}{x^2} - \frac{12}{xy} + \frac{9}{y^2}$	h. $\frac{a^2}{b^2} + 2 + \frac{b^2}{a^2}$

1-66

a. $x^4 - y^2$	e. $-\frac{1}{9} + y^6$
b. $\frac{1}{y^2} - 1$	f. $6\frac{1}{4}x^2 - 12\frac{1}{4}$
c. $x^4 - \frac{1}{4}x^2$	g. $\frac{3}{a^2} - 3$
d. $-\frac{1}{x^2} + 1$	h. $-x^2 + \frac{1}{x^2}$

1-67

a. $x^4 - 18x^2 + 81$	e. $x^4 - 1$
b. $x^4 - 2x^2 + 1$	f. $= 16x^4 - 256$
c. $= 81x^4 - 18x^2 + 1$	g. $16x^4 - 392x^2 + 2401$
d. $\frac{16}{81} - x^4$	h. $x^8 - 1$

1-68

a. $(a + 3)^2$	c. $(3p - 2)^2$	e. $(4p - 7q)(4p + 7q)$
b. $(y + 6)(y + 4)$	d. $(4x + 1)^2$	f. $(5a + 11b)(5a - 11b)$

1-69	a. $(x + 0,1)^2$	c. $(15 - b)^2$	e. $(30x^3 + 17y^2)(30x^3 - 17y^2)$
	b. $(1\frac{3}{7}x + 2\frac{4}{5})^2$	d. $(x^4 - 14)(x^4 + 14)$	f. $(y + 0,5x)(y - 0,5x)$
1-70	a. $9a^2 - 49$	c. $x^6 - 1$	
	b. $12\frac{1}{4}c^8 - 4\frac{76}{81}$	d. $28\frac{4}{5}x^{10} - 4x + \frac{9}{64}\frac{1}{x^4}$	
1-71	a. $(4p - 7q)(4p + 7q)$	c. $(\frac{1}{10}k + \frac{1}{3})(\frac{1}{10}k - \frac{1}{3})$	e. $(\frac{4}{15} + 1\frac{2}{11}p)(\frac{4}{15} - 1\frac{2}{11}p)$
	b. $(2y + 5)^2$	d. $2(4x - y)^2$	f. $(\frac{1}{5}a + 11b)(\frac{1}{5}a - 11b)$
1-72	a. $(\frac{1}{2}a + 30)(\frac{1}{2}a - 30)$	c. $(14c + 9)(14c - 9)$	e. $(2x + 7y)^2$
	b. $(3y - 10)^2$	d. $(11c + 12)(11c - 12)$	f. $(x^4 + 100)(x^2 + 10)(x^2 - 10)$
1-73	a. $2(\frac{1}{2}y + \frac{1}{4}x)(\frac{1}{2}y - \frac{1}{4}x)$	c. $(x + 0,1)^2$	e. $(15 - \frac{1}{30}b)^2$
	b. $(3\frac{1}{2}x - 5)^2$	d. $(x + 4)(x - 7)$	f. $(x + 6)(x - 5)$
1-74	a. $(1\frac{1}{3}y + 2\frac{1}{7}p)(1\frac{1}{3}y - 2\frac{1}{7}p)$	c. $(x + 6)(x - 7)$	e. $(x + 11)(x - 13)$
	b. $(x - 9)^2$	d. $(x + 16)^2$	f. $(x + 4)(x - 5)$
1-75	a. $16y^2 + 144xy + 324x^2$	c. $144a^2 - 12a + \frac{1}{4}$	e. $x^2 + 4x - 77$
	b. $4a^2 + 52ab + 169b^2$	d. $16a^2 - 225$	f. $x^2 - 5x^2 - 104$
1-76	a. $16a^2x^2 - 8axy + y^2$	c. $\frac{a^2}{4} - \frac{9}{b^2}$	e. $9y^2 - x^2$
	b. $144x^3 - 144x^2y + 36xy^2$	d. $-x^2 + 9y^2$	f. $\frac{a^2}{b^2} + 2 + \frac{b^2}{a^2}$
1-77	a. $(x + 10)(x + 21)$	c. $(x - 60)(x + 6)$	e. $(x - 8)(x + 45)$
	b. $(x - 40)(x - 9)$	d. $-(x - 4)(x + 41)$	f. $-(x - 36)(x + 25)$
1-78	a. $(xy + 8z)^2$	c. $\frac{1}{2}(x - y)^2$	e. $(\frac{1}{2}x - 2z)^2$
	b. $(x^2 - 1)(x^2 - 9)$	d. $(\frac{1}{4}y^2 + t^2)^2$	f. $a^3(a^2 + 1)$
1-79	a. $(z^2 - 11)(z^2 + 19)$	c. $(z - 25)^2$	e. $3x(x - 1)^2$
	b. $5(ab + 2c)(ab - 7c)$	d. $3x(x^2 - 3x - 38)$	f. $3x(x - 8)(x + 6)$
1-80	a. $7\frac{1}{2}(x + 1)^2$	c. $(x^2 - 2)^2$	e. $(x^2 - 4x)^2$
	b. $(x^2 - 3)^2$	d. $(x + 1)^2(x - 9)^2$	f. $(x + 3)^2(x - 3)^2$

1-81	a. $(x^4 + y^3)(x^4 - y^3)$	c. $(x^4 + 2y^3)(x^4 - 2y^3)$	e. $(4x^4 + y^2)(2x^2 + y)(2x^2 - y)$
	b. $(\frac{1}{4}x^4 + y^2)(\frac{1}{2}x^2 + y)(\frac{1}{2}x^2 - y)$	d. $(\frac{1}{4}x^4 + 9y^2)(\frac{1}{2}x^2 + 3y)(\frac{1}{2}x^2 - 3y)$	f. $2(x^8 + 4)$
1-82	a. $(\frac{1}{8}x^2 + y^2)(\frac{1}{8}x^2 - y^2)$	c. $z^5(z + 1)(z - 1)$	e. $z^3(z^2 + 1)(z + 1)(z - 1)$
	b. $\frac{1}{2}(x + 3z)(x - 3z)$	d. $\frac{1}{2}(x^2 + 9)(x + 3)(x - 3)$	f. $(\frac{1}{x} + \frac{1}{y})(\frac{1}{x} - \frac{1}{y})$
1-83	a. $2(x^2 + 1)(x + 1)(x - 1)$	c. $(y^2 + 4)(y + 2)(y - 2)$	e. $(\frac{1}{3} + \frac{1}{z})(\frac{1}{3} - \frac{1}{z})$
	b. $(\frac{1}{4} + \frac{1}{x})(\frac{1}{4} - \frac{1}{x})$	d. $a(a + b)(a - b)$	f. $b(2b + 3c)(2b - 3c)$
1-84	a. $2(2a + 5)(2a - 5)$	c. $ab(3a + 5b)(3a - 5b)$	e. $(7a + 10a^2)(7a - 10a^2)$
	b. $2b(10a + 7b^2)(10a - 7b^2)$	d. $5(a + b)^2$	f. $a(a - b)^2$
1-85	a. $(x + 6)(x - 5)$	c. $(3x + y)^2$	e. $(x - 6)^2$
	b. $(2ab - 3c)^2$	d. $(x + 15)(x - 2)$	f. $(12y - 7px)(12y + 7px)$

1-86	a. $3ab(a + b)^2$	e. $5a^2b(2a - b)^2$
	b. $2(a - 2b)(a - 3b)$	f. $a(a + 2b)(a - 12b)$
	c. $2ab(a + b)(a - 10b)$	g. $3ab(b + 4c)(b - c)$
	d. $2a(a^3 - 27b^3)$	h. $2ab(125b^3 + 64c^3)$

1-87	a. $4a^2 + 12ab + 9b^2 - c^2$	e. $9a^2 - 12ab + 4b^2 - 16c^2$
	b. $9x^2 + 12xy + 4y^2 - z^2$	f. $4x^2 - 12xy + 9y^2 - 25z^2$
	c. $25a^2 - 20ab + 4b^2 - 16c^2$	g. $36a^2 - 36ab + 9b^2 - 16c^2$
	d. $25x^2 + 20xy + 4y^2 - 36z^2$	h. $25x^2 + 20xy + 4y^2 - 9z^2$

1-88	a. $9a^2 - 9b^2 - 30ac + 25c^2$	c. $100a^2 - 4b^2 + 4bc - c^2$
	b. $9x^2 + 6xz - 16y^2 + z^2$	d. $64x^2 - 48xz - 25y^2 + 9z^2$

1-89 $(x - 3)^2 - 9 = x^2 - 6x + 8 = (x - 2)(x - 4)$

- 1-90** a. -8
 b. -9
 c. -57
 d. -31

- 1-91** a. -2
 b. 3
 c. -9
 d. -15

- 1-92** a. $-7\frac{4}{5}$
 b. 111
 c. -57
 d. 54

- 1-93** a. -42
 b. -68
 c. 42
 d. -56

1-94

- a. a
 b. $4\frac{1}{6}$

1-95

- a. $\frac{a}{b}$
 b. 6

1-96

- a. 4
 b. $\frac{1}{2}$

1-97

- a. $4x$
 b. $9c$

1-98

- a. $\frac{3a}{4x}$
 b. $-\frac{7}{x^2}$

- c. $1\frac{1}{2}$
 d. 4

- c. $6b$
 d. $\frac{4q}{p}$

- c. 30
 d. $6c$

- c. $2k$
 d. -5

- c. $-\frac{2p}{3}$
 d. $-4z^2$

- e. 21
 f. -33
 g. -22
 h. -42

- e. $-2\frac{3}{5}$
 f. -62
 g. $10\frac{2}{9}$
 h. -119

- e. 35
 f. 2
 g. 9
 h. -141

- e. 35
 f. -6
 g. 19
 h. $2\frac{8}{13}$

- e. $5x$
 f. $\frac{1}{4}$

- e. $1\frac{3}{7}x$
 f. 4

- e. 5
 f. $\frac{c}{6}$

- g. $2y$
 h. 7

- g. 2
 h. $7m$

- g. 1
 h. $\frac{1}{6}$

- g. $\frac{1}{2}a^2$
 h. $-\frac{3m}{n}$

- g. $-\frac{yz}{4}$
 h. $\frac{py}{3}$

- | | | |
|--|--|---|
| <p>1-99</p> <p>a. $\frac{x+3}{x+2}$</p> <p>b. $\frac{x+2}{x+5}$</p> | <p>c. $\frac{x-4}{x+1}$</p> <p>d. $\frac{x+4}{x-2}$</p> | <p>e. $\frac{x+2}{x-3}$</p> <p>f. $\frac{x+1}{x-1}$</p> |
| <p>1-100</p> <p>a. $\frac{x-3}{x+3}$</p> <p>b. $\frac{x-5}{x-2}$</p> | <p>c. $\frac{x+1}{x-3}$</p> <p>d. $\frac{x+1}{x+10}$</p> | <p>e. $\frac{x+1}{x+3}$</p> <p>f. $\frac{x-6}{x+6}$</p> |
| <p>1-101</p> <p>a. $\frac{2p}{3}$</p> <p>b. $\frac{p}{2}$</p> | <p>c. $\frac{p}{3}$</p> <p>d. xy</p> | <p>e. $\frac{5p}{4}$</p> <p>f. $\frac{2k^2}{5}$</p> <p>g. $2p$</p> <p>h. $\frac{xy^2}{2}$</p> |
| <p>1-102</p> <p>a. $\frac{1}{x}$</p> <p>b. $\frac{2a^2+2b^2}{5b}$</p> | <p>c. $\frac{4+3a}{x}$</p> <p>d. $\frac{c^2}{b}$</p> | <p>e. $\frac{a+b}{4}$</p> <p>f. $\frac{1}{ap}$</p> <p>g. $\frac{a+b}{x}$</p> <p>h. $\frac{1+2q}{3ap}$</p> |
| <p>1-103</p> <p>a. $\frac{a^2+15}{3a}$</p> <p>b. $\frac{b^2+4a}{4b}$</p> | <p>c. $\frac{p^2+3q}{pq}$</p> <p>d. $\frac{a^2+b^2}{ab}$</p> | <p>e. $\frac{5x+xy}{3y}$</p> <p>f. $\frac{4b^2+3c^2}{2bc}$</p> <p>g. $\frac{4k^2+10m}{5k}$</p> <p>h. $\frac{d^2+15e^2}{5de}$</p> |
| <p>1-104</p> <p>a. $\frac{a+5}{5}$</p> <p>b. $\frac{6-b}{3}$</p> | <p>c. $\frac{a-5}{5}$</p> <p>d. $\frac{b-2a}{b}$</p> | <p>e. $\frac{b+27}{9}$</p> <p>f. $\frac{3d+2c}{d}$</p> <p>g. $\frac{2b+3d}{d}$</p> <p>h. $\frac{2q-p}{q}$</p> |
| <p>1-105</p> <p>a. $\frac{85b+33a}{15ab}$</p> <p>b. $-\frac{q}{6p^2}$</p> | <p>c. $\frac{2a-4b}{a^2b}$</p> <p>d. $\frac{6k^2+5m}{km^2}$</p> | <p>e. $\frac{4xy-15}{3y^2}$</p> <p>f. $\frac{-3q^2-5pq}{p^2}$</p> <p>g. $\frac{18m^2-10n^2}{15mn}$</p> <p>h. $\frac{ab^2-a}{bc}$</p> |
| <p>1-106</p> <p>a. $\frac{4t+5q}{6pqt}$</p> <p>b. $\frac{ay+5x}{xy^2}$</p> | <p>c. $\frac{4t^2-5q}{6pqt}$</p> <p>d. $\frac{10y-ax}{2xy^2}$</p> | <p>e. $\frac{3b+4a}{a^2b^2}$</p> <p>f. $\frac{15x^2-2cd}{6cdx}$</p> <p>g. $\frac{3c^4+2ab^2}{a^2bc^3}$</p> <p>h. $\frac{2c+3a}{2abc}$</p> |
| <p>1-107</p> <p>a. $\frac{5}{a+b}$</p> <p>b. $\frac{a+b}{a^2+b^2}$</p> <p>c. 1</p> <p>d. $\frac{8}{3+x}$</p> | <p>e. $\frac{a-5}{a^2+b^2}$</p> <p>f. 3</p> <p>g. $\frac{3+2y}{3+y}$</p> <p>h. 1</p> | |
| <p>1-108</p> <p>a. $\frac{4a^2}{b}$</p> <p>b. $-4y$</p> | <p>c. $\frac{a}{6}$</p> <p>d. $3q$</p> | <p>e. $\frac{p+q}{5}$</p> <p>f. $\frac{3-4mt}{m^2}$</p> <p>g. $\frac{3-2b}{3}$</p> <p>h. $\frac{a^2-bc}{ac}$</p> |

1-109

a. $\frac{ac}{bd}$	c. $-\frac{ac}{bd}$	e. $-\frac{ac}{bd}$	g. $\frac{6ac}{5bd}$
b. $\frac{8px}{3qy}$	d. $\frac{9q}{2xy}$	f. $\frac{16tx}{15yz}$	h. $-\frac{3abd}{cpq}$

1-110

a. $\frac{1}{2}$	c. 3	e. -3	g. 1
b. $\frac{1}{2}$	d. 2	f. -2a	h. $-\frac{1}{4}$

1-111

a. $\frac{a+b}{a}$	e. $\frac{a^2+ab}{4}$
b. $\frac{a^2+ab}{2}$	f. $\frac{1}{2}a$
c. $\frac{(a+b)^2}{6}$	g. $\frac{a+b}{3}$
d. $\frac{a}{2}$	h. $\frac{a+b}{5}$

1-112

a. $-\frac{1}{a}$	c. $\frac{a}{4}$	e. $\frac{9a}{c}$	g. $-\frac{1}{3}$
b. $\frac{e}{14d}$	d. 6	f. $\frac{4a}{3dq}$	h. $-\frac{2p}{9}$

1-113

a. a	c. $\frac{1}{a}$	e. $\frac{2}{a}$	g. 2a
b. -3a	d. 3	f. 1	h. -1

1-114

a. b	c. 3b	e. b^2	g. ab
b. $-3ab^2$	d. $-3a^2b$	f. -b	h. -1

1-115

a. $-2x^3y$	c. $\frac{-4}{x^2}$	e. $-\frac{a}{pq}$
b. $\frac{1}{q^2}$	d. $-kx^2$	f. $\frac{m}{a}$

1-116

a. $\frac{2}{3}$	c. 6	e. $\frac{5}{6}$	g. $\frac{1}{4}$
b. 1	d. 3	f. -1	h. 1

1-117

a. $\frac{2}{3}$	c. $4\frac{1}{2}$	e. $-\frac{3}{7}$	g. $\frac{3}{5}$
b. $\frac{3}{4}$	d. $-1\frac{1}{2}$	f. $-\frac{2}{9}$	h. $-1\frac{4}{5}$

1-118

a. $\frac{1}{3}$	c. 9	e. $-3\frac{3}{4}$	g. $1\frac{1}{8}$
b. $\frac{3}{8}$	d. -2	f. $7\frac{1}{2}$	h. $-\frac{15}{64}$

1-119

a. $\frac{1}{x}$

b. $3ab$

c. $4a^2$

d. $\frac{3a^5}{b}$

e. 4

f. $-a^4$

g. $\frac{1}{4}$

h. $-9a^2$

1-120

a. $\frac{1}{2}x$

b. $\frac{4x^2}{9y^2}$

c. $\frac{6x}{y}$

d. 1

e. $-\frac{m}{n}$

f. $\frac{x}{4y}$

g. $-\frac{n}{m}$

h. $\frac{3pxz}{2}$

1-121

a. $\frac{a}{a+b}$

b. $\frac{a}{a+b}$

c. $-\frac{1}{2}$

d. $-\frac{3}{a+b}$

e. $\frac{a+b}{a}$

f. $\frac{1}{2}a$

g. $\frac{a+b}{2}$

h. -3

1-122

a. $2x$

b. 3

c. 1

d. $\frac{3}{q}$

e. $\frac{3}{5}$

f. $2m$

g. $8pq$

h. $12pq$

1-123

a. $25ab$

b. $9xy$

c. $6pq$

d. $\frac{p}{7}$

e. 10

f. 1

g. $7\frac{1}{2}x$

h. $8b$

1-124

a. $100b$

b. $10x$

c. $2xy$

d. $\frac{2ac}{b}$

e. $4\frac{1}{2}b^2$

f. $5pq$

g. 3

h. $\frac{1}{2ab}$

1-125

a. b

b. $12a$

c. $\frac{1}{2q}$

d. $7\frac{1}{2}ab$

e. $\frac{a}{b}$

f. $\frac{1}{8}$

g. $10ab$

h. $2q$

1-126

a. $\frac{3}{8}(x+y)^2$

b. $-\frac{1}{32}(x-y)^2$

c. $-\frac{3}{25}(a+b)^2$

d. $-\frac{2}{3(a+2b)}$

e. 1

f. 56

g. $-\frac{5b}{6}$

h. $-\frac{5}{2a+2b}$

1-127

a. $\frac{3p(q+2)}{2}$

b. 1

c. 1

d. $4^2 = 16$

e. $\frac{2b}{b+1}$

f. $2^4 = 16$

g. a

h. $-\frac{b^2}{4a}$

1-128

- a. -1
- b. $\frac{a+1}{a+b}$
- c. 9
- d. p

e. $-\frac{1}{a+b}$

f. 1

g. a^2

h. $\frac{3}{a+b}$

1-129

- a. $\frac{a}{p^2}$
- b. $-\frac{9}{16}$
- c. $\frac{a+ab+b}{a}$
- d. $\frac{1}{2}$

e. $\frac{p^8}{a^3}$

f. $-\frac{a^2+1}{a}$

g. $\frac{(a+b)^2}{9}$

h. $-\frac{1}{a}$

1-130

- a. $-\frac{1}{a^2}$
- b. $\frac{a^2-1}{a}$
- c. $\frac{x^2+2xy+y^2}{xy} = \frac{(x+y)^2}{xy}$
- d. $\frac{6}{1-p^2}$

e. $-a^2$

f. 1

g. 1

h. -2

1-131

a. $\frac{yz}{x}$

c. $\frac{xy}{2z^2}$

e. $\frac{3x}{4a}$

g. $\frac{x+y}{x}$

b. $\frac{a+b}{a-b}$

d. -1

f. a

h. $a - b$

1-132

a. $\frac{a-b}{a}$

c. $\frac{x-y}{x+y}$

e. $\frac{a-b}{a+b}$

g. $-\frac{a}{b}$

b. $-\frac{x+1}{x}$

d. $-\frac{a}{a^2+1}$

f. $p^n + 1$

h. $\frac{x}{y}$

1-133

a. $\frac{a-2}{a+2}$

e. $\frac{x-y}{3}$

b. $\frac{x+1}{x+3}$

f. $\frac{x-3}{x+2}$

c. $\frac{x-3}{x-1}$

g. $\frac{x-7}{x-3}$

d. $-\frac{1+x}{4x}$

h. $\frac{y-z}{y+z}$

1-134

- a. 1
- b. 2
- c. $a - b$
- d. $p + 1$

e. 3

f. x

g. 0

h. $\frac{x+y}{xy}$

1-135

a. $\frac{xz-y^2}{yz}$

c. $\frac{m^2+n^2}{mn}$

e. $\frac{q-p}{p^2q}$

g. $\frac{a+b}{abc}$

b. $\frac{x^2-y^2}{xyz}$

d. $\frac{a-1}{a^2}$

f. $\frac{a}{c^2}$

h. $\frac{a-1}{a}$

- 1-136**
- a. $\frac{a^2+1}{a}$
 - b. $\frac{2y}{x^2-y^2}$
 - c. $\frac{x^2}{x+1}$
 - d. $\frac{y}{x-y}$
- 1-137**
- a. $\frac{1}{p+2}$
 - b. $\frac{2m}{m^2-n^2}$
 - c. $\frac{a^2}{(a-b)^2}$
 - d. $t + 2$
- 1-138**
- a. $\frac{y+1}{y-1}$
 - b. $\frac{a-b-c}{a+b-c}$
 - c. $\frac{a+b+1}{a+b-1}$
 - d. 0

- e. $\frac{2a^2}{a^2-b^2}$
 - f. $\frac{ab}{a+b}$
 - g. $-\frac{b}{a+b}$
 - h. $\frac{a^2+b^2}{a^2-b^2}$
- e. $\frac{1}{x^3-x}$
 - f. $-\frac{1}{ab}$
 - g. $\frac{x}{1-x^2}$
 - h. 0
- e. $\frac{(a+1)^2}{a^2+1}$
 - f. $\frac{x-y+1}{2x}$
 - g. 1
 - h. a

- 1-139** $16y^2 - 24xy + 9x^2$
- 1-140** $144a^2 - 12a + \frac{1}{4}$
- 1-141** $x^2 + 4x - 77$
- 1-142** $4a^2 + 52ab + 169b^2$
- 1-143** $16a^2 - 225$
- 1-144** $x^4 - 5x^2 - 104$
- 1-145** $16a^2x^2 - 8axy + y^2$
- 1-146** $\frac{a^2}{4} - \frac{b^2}{9}$
- 1-147** $x^2 - 9y^2$
- 1-148** $144x^3 + 144x^2y + 36xy^2$
- 1-149** $-x^2 + 9y^2$
- 1-150** $(x + 3)(x + 4)$
- 1-151** $(x - 8)(x + 3)$
- 1-152** $(x + 6)(x - 5)$
- 1-153** $(3x - y)^2$
- 1-154** $(x - 2)(x - 10)$
- 1-155** $(2ab - 3c)^2$
- 1-156** $(x + 15)(x - 2)$
- 1-157** $(12y - 7px)(12y + 7px)$
- 1-158** $9a^2 - 49$
- 1-159** $x^6 - 1$

- 1-160** $81x^4 - 625$
- 1-161** $254\frac{1}{256}$
- 1-162** $198\frac{1}{196}$
- 1-163** 6396
- 1-164** $9a^2 - 12ab + 4b^2 - 16c^2$
- 1-165** $-4(x - 3)(x + 10)$
- 1-166** $(3y - 10)^2$
- 1-167** $2(2x + 7)^2$
- 1-168** $(4c + 9)(4c - 9)$
- 1-169** $2(c - 12)(c + 12)$
- 1-170** $3(x^4 - 14)(x^3 + 14)$
- 1-171** $(y - 3, 5x)(y + 3, 5x)$
- 1-172** $(15 - b)^2$
- 1-173** $49y^2 + 70xy + 25x^2$
- 1-174** $36a^2 - 60a + 25$
- 1-175** $64a^2 - 100b^2c^2$
- 1-176** $9c^2 + 66cd + 121d^2$
- 1-177** $x^2 + 11x - 42$
- 1-178** $p^2 - 20p + 91$
- 1-179** $20\frac{1}{4}$
- 1-180** $\frac{1}{9}a^2 - 4ab + 36b^2$

1-181	$(x + 2)(x + 5)$
1-182	$(x - 9)(x + 2)$
1-183	$(x - 8)(x - 13)$
1-184	$(4x - 3y)^2$
1-185	$(2ab - 5c)^2$
1-186	$(x + -2)(x + 15)$
1-187	$(8y - 9x)(8y + 9x)$
1-188	$(1\frac{2}{3}x - \frac{1}{13}y)(1\frac{2}{3}x + \frac{1}{13}y)$
1-189	$144a^2 - 49$
1-190	$398\frac{1}{400}$

1-191	$16x^4 - 72x^2y^2 + 81y^4$
1-192	$\frac{49}{25}a^2 - 10ab + \frac{225}{49}b^2$
1-193	16891
1-194	$25a^2 - 20ab + 4b^2 - 81c^2$
1-195	$-3(x + 10)(x - 3)$
1-196	$(1\frac{3}{4}x + 1\frac{2}{7})^2$
1-197	$-3(2x + 7y)^2$
1-198	$(3y - 12z)^2$
1-199	$\frac{1}{2}(\frac{1}{2}p - \frac{1}{4})(\frac{1}{2}p + \frac{1}{4})$

2 Vergelijkingen

2-1 a. 1

b. 0

c. 0

d. -11

2-2 a. 0

b. $5\frac{2}{3}$

c. -3

d. -2

2-3 a. $\frac{3}{2}$

b. 0

2-4 a. $\frac{3}{2}$

b. 1

2-5 a. 1

b. $-\frac{2}{3}$

2-6 a. -14

b. k.n.

c. $\frac{1}{6}$

2-7 a. k.n.

b. $2\frac{7}{15}$

c. $3\frac{1}{2}$

e. -9

f. $-\frac{1}{6}$

g. k.n.

h. 18

e. alle x-en zijn goed

f. 2

g. geen oplossing

h. 1

c. -6

d. $-\frac{6}{7}$

c. 3

d. 0

c. 6

d. 5

e. $\frac{6}{5}$

f. 70

e. 9

f. 15

e. -8

f. -4

d. -11

e. $-\frac{2}{7}$

f. alle x

d. $1\frac{1}{5}$

e. $-1\frac{1}{2}$

f. 1

- | | | | | |
|-------------|---|-------------------------------------|----------------------|------|
| 2-8 | a. $2\frac{1}{4}$ | c. $-\frac{1}{10}$ | e. $-\frac{1}{3}$ | |
| | b. $\frac{3}{4}$ | d. $\frac{1}{4}$ | f. $1\frac{3}{4}$ | |
| 2-9 | a. $\frac{3}{4}$ | c. $2\frac{1}{2}$ | e. $\frac{3}{14}$ | |
| | b. -2 | d. $\frac{3}{5}$ | f. $-\frac{1}{10}$ | |
| 2-10 | a. 1 | c. $-2\frac{3}{4}$ | e. 0 | |
| | b. $-2\frac{4}{4}$ | d. $-4 \vee 2$ | f. $-2 \vee 4$ | |
| 2-11 | a. $-\frac{2}{3}$ | | c. alle x | |
| | b. k.n. | | d. $-\frac{3}{5}$ | |
| 2-12 | a. $-\frac{3}{7}$ | | c. 0 | |
| | b. 0 | | d. $-\frac{1}{12}$ | |
| 2-13 | a. $3\frac{1}{3}$ | c. 10 | e. -2 | |
| | b. $\frac{1}{2}$ | d. geen opl. | f. $4\frac{1}{3}$ | |
| 2-14 | a. $2\frac{3}{4}$ | c. $12\frac{3}{5}$ | e. -1 | |
| | b. $2\frac{2}{3}$ | d. $18\frac{1}{2}$ | f. $33\frac{1}{3}$ | |
| 2-15 | a. 3^e | c. 1^e | e. 2^e | |
| | b. 3^e | d. 2^e | f. 2^e | |
| 2-16 | a. 0 | c. 0 | e. 0 | g. 0 |
| | b. 0 | d. 0 | f. 0 | h. 0 |
| 2-17 | a, b, d, f, en g. | | | |
| 2-18 | a = 0, b = 0 en c = onbekend | | | |
| 2-19 | Ans | | | |
| 2-20 | hoeft niet, $8 = 1 \cdot 8 = 2 \cdot 4 = 4 \cdot 2 = 8 \cdot 1$ | | | |
| 2-21 | a. ja, ja b. nee, nee, ja, nee | | | |
| 2-22 | a. dan wordt de eerste factor nul. b. $2\frac{1}{2}$ | | | |
| 2-23 | a. x en (x - 17) b. 0 c. 17 d. 0 en 17 | | | |
| 2-24 | a. 5, 10 | c. $-3, \frac{1}{2}$ | e. 0, -12 | |
| | b. 0, 5 | d. 2, -4 | f. $0, 4\frac{1}{2}$ | |
| 2-25 | a. $7 \vee \frac{2}{3}$ | c. $-5 \vee 0$ | e. $-3 \vee 18$ | |
| | b. $-8\frac{1}{2} \vee 0$ | d. $-\frac{1}{3} \vee -\frac{7}{5}$ | f. -3 | |
| 2-26 | a = 0 \vee b = 0 \vee c = 0 | | | |
| | $1 \vee -3 \vee \frac{1}{7}$ | | | |

- | | |
|---|---|
| <p>2-27</p> <p>a. $2 \vee -7 \vee 18$</p> <p>b. $-1 \vee -1\frac{1}{2} \vee 14$</p> | <p>c. $0 \vee 1 \vee 1\frac{1}{2}$</p> <p>d. $0 \vee -5 \vee 5$</p> |
| <p>2-28</p> <p>a. $3 \vee 4$</p> <p>b. $-10 \vee \frac{1}{3}$</p> | <p>c. $-3 \vee -2$</p> <p>d. $-5 \vee \frac{2}{3}$</p> |
| <p>2-29</p> <p>a. $-5 \vee 5$</p> <p>b. $-3\frac{1}{3} \vee 2\frac{1}{3}$</p> | <p>c. 1</p> <p>d. $-2 \vee 0$</p> |
| <p>2-30</p> <p>a. 3</p> <p>b. ± 2</p> <p>c. $\frac{6}{7} \vee 3\frac{7}{11}$</p> | <p>d. $\frac{2}{5}$</p> <p>e. $12 \vee -\frac{6}{7}$</p> <p>f. $\frac{2}{3} \vee \frac{5}{8}$</p> |
| <p>2-31</p> <p>a. $3 \vee -5 \vee 4$</p> <p>b. $5 \vee 1$</p> <p>c. $0 \vee 42 \vee 1\frac{1}{2}$</p> | <p>d. $3 \vee -5 \vee 3$</p> <p>e. $-10 \vee 2\frac{1}{2}$</p> <p>f. $\frac{1}{2} \vee 0$</p> |
| <p>2-32</p> <p>a. $0 \vee 3$</p> <p>b. $0 \vee \frac{2}{3}$</p> | <p>c. $0 \vee 5$</p> <p>d. $0 \vee -2$</p> |
| <p>2-33</p> <p>a. $0 \vee \frac{3}{2}$</p> <p>b. $0 \vee \frac{1}{2}$</p> | <p>c. $0 \vee \frac{2}{3}$</p> <p>d. $0 \vee \frac{5}{3}$</p> |
| <p>2-34</p> <p>a. $0 \vee \frac{1}{2}$</p> <p>b. $0 \vee 1\frac{1}{5}$</p> <p>c. $0 \vee 1\frac{2}{17}$</p> | <p>d. $0 \vee -12$</p> <p>e. $0 \vee 1\frac{1}{7}$</p> <p>f. $0 \vee 15\frac{1}{2}$</p> |
| <p>2-35</p> <p>a. $0 \vee -3$</p> <p>b. $-2 \vee 0$</p> | <p>c. $0 \vee 3$</p> <p>d. $-4 \vee 0$</p> |
| <p>2-36</p> <p>a. $2 \vee \frac{5}{2}$</p> <p>b. $-1 \vee 0$</p> | <p>c. $-\frac{1}{3} \vee 0$</p> <p>d. 0</p> |
| <p>2-37</p> <p>a. $-3 \vee 1$</p> <p>b. 7</p> | <p>c. $1 \vee 3$</p> <p>d. $-3 \vee -2$</p> |
| <p>2-38</p> <p>a. $-3 \vee -9$</p> <p>b. ± 3</p> | <p>c. $p = 0 \vee -1$</p> <p>d. $0 \vee 2$</p> |
| <p>2-39</p> <p>a. $-6 \vee -4$</p> <p>b. $-1 \vee -3$</p> | <p>c. $-12 \vee 2$</p> <p>d. -2</p> |
| | <p>e. $0 \vee 6$</p> <p>f. $-1 \vee 0$</p> <p>e. $-\frac{2}{3} \vee 0$</p> <p>f. $-\frac{1}{2} \vee 0$</p> <p>e. $-1 \vee 49$</p> <p>f. 3</p> <p>e. -9</p> <p>f. $-2 \vee 5$</p> <p>e. $6 \vee 4$</p> <p>f. $-5 \vee 1$</p> |

2-40 a. $-1 \vee -6$

b. $-4 \vee -7$

c. 6

d. $-1 \vee -5$

e. $6 \vee -1$

f. $4 \vee -3$

2-41 a. $5 \vee -2$

b. $-3 \vee 2$

c. $0 \vee -2$

d. $0 \vee -1$

e. ± 3

f. 9

2-42

a. $x = 1 \vee x = 2$

c. $x = -3 \vee x = -1$

e. $x = -3 \vee x = 5$

b. $x = -9 \vee x = 2$

d. $x = -1 \vee x = 5$

f. $x = 2 \vee x = 4$

2-43

a. $x = -7 \vee x = 2$

c. $x = -5 \vee x = 2$

e. $x = -8 \vee x = -1$

b. $x = 1 \vee x = 12$

d. $x = -1 \vee x = 12$

f. $x = -1 \vee x = 14$

2-44

a. $x = -1 \vee x = 8$

c. $x = 1 \vee x = 7$

e. $x = -6 \vee x = -1$

b. $x = -6 \vee x = 1$

d. $x = -12 \vee x = 2$

f. $x = -2 \vee x = 12$

2-45

a. $x = -6 \vee x = -4$

c. $x = 4 \vee x = 6$

e. $x = 3 \vee x = 10$

b. $x = -10 \vee x = -3$

d. $x = -2 \vee x = 15$

f. $x = -15 \vee x = 2$

2-46

a. $x = -8 \vee x = -2$

c. $x = 1 \vee x = 15$

e. $x = -1 \vee x = 3$

b. $x = -5 \vee x = 6$

d. $x = -6 \vee x = 5$

f. $x = -8 \vee x = 3$

2-47

a. $x = -9 \vee x = -3$

c. $x = -7 \vee x = -1$

e. $x = -3 \vee x = 6$

b. $x = -6 \vee x = 3$

d. $x = -6 \vee x = 3$

f. $x = 2 \vee x = 3$

2-48

a. $x = 2 \vee x = 3$

c. $x = -6 \vee x = -1$

e. $x = -6 \vee x = -1$

b. $x = -4 \vee x = -2$

d. $x = -4 \vee x = 3$

f. $x = -7 \vee x = -3$

2-49

a. $x = -2 \vee x = 7$ | c. $x = -6 \vee x = 2$ | e. $x = -1 \vee x = 3$
 b. $x = -1 \vee x = 5$ | d. $x = -7 \vee x = 1$ | f. $x = -5 \vee x = 7$

2-50

a. ± 1 | c. $\pm \frac{3}{4}$ | e. ± 1
 b. ± 8 | d. ± 5 | f. ± 9

2-51

a. $x = \pm 3\frac{1}{3}$ | c. $x = \pm \frac{7}{11}$ | e. $x = \pm 78$
 b. $x = \pm 1\frac{3}{7}$ | d. $x = \pm \frac{2}{5}$ | f. $x = \pm 2$

2-52

a. $x = \pm \frac{4}{15}$ | c. $x = \pm \frac{5}{24}$ | e. $x = \pm \frac{8}{21}$
 b. $x = \pm \frac{5}{24}$ | d. $x = \pm \frac{2}{5}$ | f. $x = \pm 1\frac{1}{3}$

2-53

a. $0 \vee \pm 4$ | c. $0 \vee \pm 3$ | e. $2 \vee 9$
 b. $0 \vee 4 \vee 9$ | d. $0 \vee \pm 3$ | f. $0 \vee -7 \vee 6$

2-54

a. $0 \vee \pm 5$ | c. $0 \vee 25$ | e. 0
 b. $0 \vee -2 \vee -5$ | d. $0 \vee \pm 1$ | f. 0

2-55

a. $0 \vee 2 \vee -14$ | c. 0 | e. ± 2
 b. $0 \vee \pm 3$ | d. $-1 \vee 0$ | f. ± 1

2-56

a. ± 2 | c. 0 | e. $2 \vee 3$
 b. 1 | d. ± 5 | f. k.n.

2-57

a. $0 \vee 25$ | c. $0 \vee \pm 5$ | e. ± 1
 b. $0 \vee -2 \vee -5$ | d. $0 \vee \pm 1$ | f. $\pm 2 \vee \pm 3$

2-58

a. ± 10 | c. ± 6 | e. $\pm 0,9$
 b. $\pm 0,4$ | d. $\pm \frac{1}{2}$ | f. $\pm \frac{3}{2}$

2-59

a. $\pm \frac{1}{2}$ | c. $\pm 2\frac{1}{2}$ | e. ± 2
 b. geen opl. | d. ± 5 | f. ± 4

2-60

a. 0 | c. geen opl. | e. ± 3
 b. geen opl. | d. $\pm 0,8$ | f. $\pm \frac{1}{2}$

2-61

a. ± 4 | c. k.n. | e. k.n.
 b. ± 2 | d. k.n. | f. $\pm \frac{1}{2}$

2-62

a. -6 | c. $-9 \vee -3$ | e. $-8 \vee 2$
 b. $-5 \vee 13$ | d. $-1 \vee 7$ | f. $-4 \vee 10$

- | | | | |
|-------------|--|--|--|
| 2-63 | a. $-14 \vee 6$ | c. $-7 \vee 11$ | e. $-8 \vee 2$ |
| | b. $-9 \vee 5$ | d. $-9 \vee -3$ | f. $-2 \vee 16$ |
| 2-64 | a. $-\frac{1}{2} \vee \frac{3}{2}$ | c. $-\frac{3}{2} \vee -\frac{1}{2}$ | e. $\frac{1}{4} \vee \frac{3}{4}$ |
| | b. $-\frac{5}{2} \vee \frac{3}{2}$ | d. $-\frac{1}{2} \vee \frac{3}{2}$ | f. $-\frac{3}{2} \vee \frac{1}{2}$ |
| 2-65 | a. $-1\frac{1}{12} \vee 2\frac{5}{12}$ | c. $-\frac{10}{21} \vee \frac{8}{21}$ | e. $-2\frac{1}{3} \vee 7$ |
| | b. $\frac{9}{16} \vee \frac{19}{16}$ | d. $-2\frac{7}{8} \vee \frac{7}{8}$ | f. $\frac{6}{55} \vee 2\frac{16}{55}$ |
| 2-66 | a. $-17 \vee 0$ | | c. $-\frac{1}{2} \vee \frac{1}{2}$ |
| | b. $-14 \vee 3$ | | d. $-7 \vee 5$ |
| 2-67 | a. $2 \vee 3$ | c. $0 \vee 2$ | e. $-7 \vee 7$ |
| | b. -2 | d. $2 \vee 4$ | f. $0 \vee 4$ |
| 2-68 | a. $2 \vee 4$ | c. $-9 \vee 10$ | e. $1 \vee 5$ |
| | b. $3 \vee 40$ | d. $3 \vee 4$ | f. -3 |
| 2-69 | a. $-5 \vee 0 \vee 5$ | c. $0 \vee 2 \vee 5$ | e. $-1 \vee 3$ |
| | b. $-\frac{1}{2} \vee 0 \vee \frac{1}{2}$ | d. $2 \vee -5$ | f. $-2 \vee 4$ |
| 2-70 | a. $4 \vee -6$ | | d. $8 \vee \frac{1}{2}$ |
| | b. $-3 \vee 4$ | | e. $3 \vee 10$ |
| | c. $0 \vee 12$ | | f. $3 \vee 7$ |
| 2-71 | a. $-6 \vee 3$ | | c. $-1 \vee 3$ |
| | b. $-\frac{1}{2} \vee 7$ | | d. $-5 \vee 9$ |
| 2-72 | a. $0 \vee 3$ | | c. $0 \vee 12$ |
| | b. $-1 \vee 0 \vee 1$ | | d. $-3 \vee 9$ |
| 2-73 | a. $1 \vee -6$ | | c. $-6 \vee 1$ |
| | b. $-2 \vee 6$ | | d. $-1 \vee 4$ |
| 2-74 | a. $-2 \vee 5$ | | c. $-2 \vee 0 \vee 2$ |
| | b. $-3 \vee 0 \vee 4$ | | d. $-1 \vee 4$ |
| 2-75 | a. 81; 27, b. $x(18 - 3x)$, c. 3, d. 3×9 m | | |
| 2-76 | a. $10x + 2x(x + 8)$, b. 3, (-16 vervalt) | | |
| 2-77 | $\frac{1}{2}$, -4 vervalt. | | |
| 2-78 | 1 en -2 of 6 en 3 | | |
| 2-79 | 4 of $\frac{1}{4}$ | | |
| 2-80 | $\frac{1}{5}$ of $\frac{1}{2}$ | | |
| 2-81 | $\frac{7}{12} \vee \frac{13}{8}$ | | |

- | | | | |
|-------------|----------------------------|---------------------------|----------------------------|
| 2-82 | 1 en 7 | | |
| 2-83 | 15 en 20 of -15 en -20 | | |
| 2-84 | a. $10 \vee -10$ | c. $9 \vee -9$ | e. $13 \vee -13$ |
| | b. $1 \vee -1$ | d. $4 \vee -4$ | f. $0,9 \vee -0,9$ |
| 2-85 | a. $0 \vee 1$ | c. $0 \vee -1\frac{1}{2}$ | e. $0 \vee 3$ |
| | b. $0 \vee 1\frac{5}{6}$ | d. $0 \vee 14$ | f. $0 \vee \frac{1}{7}$ |
| 2-86 | a. $0 \vee -1$ | c. $0 \vee 2$ | e. $3 \vee -3$ |
| | b. $4 \vee -4$ | d. $-3 \vee -2$ | f. geen oplossing |
| 2-87 | a. $-3 \vee 1$ | c. $-1 \vee 3$ | e. $-1 \vee 49$ |
| | b. $-49 \vee 1$ | d. 7 | f. $1 \vee 3$ |
| 2-88 | a. $-6 \vee -4$ | c. $-12 \vee 2$ | e. $-2 \vee 12$ |
| | b. $-3 \vee -1$ | d. -2 | f. $-2 \vee 5$ |
| 2-89 | a. $0 \vee 3$ | c. $0 \vee 2$ | e. $-1 \vee 0$ |
| | b. $0 \vee 14$ | d. $-7 \vee 0$ | f. $0 \vee 2$ |
| 2-90 | a. $-1 \vee 12$ | c. $-12 \vee 1$ | e. $-2 \vee 6$ |
| | b. $-6 \vee 2$ | d. $-3 \vee 4$ | f. $-4 \vee 3$ |
| 2-91 | a. 0 | c. $0 \vee 2$ | e. $0 \vee \frac{2}{3}$ |
| | b. $2 \vee 4$ | d. $-2 \vee 8$ | f. $-10 \vee 4$ |
| 2-92 | a. $-1 \vee 4$ | c. $1 \vee 3$ | e. 4 |
| | b. $2 \vee 4$ | d. $1 \vee 7$ | f. $-3 \vee 10$ |
| 2-93 | a. $-2 \vee 4$ | | c. $1 \vee 3$ |
| | b. $5 \vee 7$ | | d. geen opl. |
| 2-94 | a. $-4 \vee 1$ | | c. $9 \vee -3$ |
| | b. $3 \vee 10$ | | d. $-5 \vee 3$ |
| 2-95 | a. $3 \vee 4$ | | c. $-4 \vee 5$ |
| | b. $0 \vee 1\frac{1}{3}$ | | d. $-8 \vee 5$ |
| 2-96 | a. $0 \vee 2$ | | c. $-8 \vee 2$ |
| | b. 5 | | d. $5 \vee 7$ |
| 2-97 | a. $5 \vee 7$ | | c. $-1\frac{1}{5} \vee 10$ |
| | b. $-8 \vee -2$ | | d. $-1 \vee 1$ |

- | | | |
|--------------|-----------------------------------|----------------------------------|
| 2-98 | a. $1 \vee 4$ | c. $-4 \vee -2$ |
| | b. $2 \vee 5$ | d. $-11 \vee 1$ |
| 2-99 | a. $-5 \vee 7$ | c. $-2 \vee 9$ |
| | b. $-10 \vee 1$ | d. ± 4 |
| 2-100 | a. -3 | c. $-3 \vee -2$ |
| | b. $-4 \vee -1$ | d. $-10 \vee 3$ |
| 2-101 | a. $3 \vee 13$ | c. $-4 \vee -11$ |
| | b. $-9 \vee -4$ | d. $-1 \vee 6$ |
| 2-102 | a. $1 \vee 8$ | c. $-12 \vee 2$ |
| | b. 1 | d. $-11 \vee 4$ |
| 2-103 | a. $-5 \vee 14$ | c. $-5 \vee 0$ |
| | b. $-9 \vee -2$ | d. $1 \vee 7$ |
| 2-104 | a. $-7 \vee -1$ | c. $-4 \vee 10$ |
| | b. $-12 \vee 1$ | d. $3 \vee 8$ |
| 2-105 | a. $2 \vee 5$ | c. $-3 \vee 2$ |
| | b. $-4 \vee 12$ | d. $-1 \vee 4$ |
| 2-106 | a. $2 \vee 4$ | c. $-11 \vee -3$ |
| | b. $3 \vee 4$ | d. $-5 \vee 0$ |
| 2-107 | a. $-1 \vee 8$ | c. $-8 \vee 4$ |
| | b. $-10 \vee -4$ | d. $-2 \vee 0$ |
| 2-108 | a. $-7 \vee 1$ | c. $0 \vee 1$ |
| | b. $-4 \vee 2$ | d. $-5 \vee -2$ |
| 2-109 | a. $1 \vee 4$ | c. $2 \vee 5$ |
| | b. $2 \vee 10$ | d. $-11 \vee 1$ |
| 2-110 | a. $-11 \vee 5$ | c. 1 |
| | b. $-5 \vee \frac{3}{5}$ | d. $-\frac{4}{5} \vee 5$ |
| 2-111 | a. $\frac{4}{5} \vee 3$ | c. $-1 \vee \frac{2}{3}$ |
| | b. $-4 \vee -1\frac{1}{3}$ | d. $-4 \vee 1\frac{1}{3}$ |
| 2-112 | a. $-\frac{3}{4} \vee 2$ | c. $-\frac{1}{5} \vee 1$ |
| | b. $-\frac{2}{3} \vee 2$ | d. 1 |

2-113 a. $-\frac{3}{5} \vee 0$

b. $\frac{4}{5} \vee 0$

2-114 a. $-\frac{3}{4} \vee 1$

b. $-1 \vee \frac{1}{5}$

c. $-\frac{1}{3} \vee 5$

d. $\frac{3}{4} \vee 2$

c. $-3 \vee \frac{2}{3}$

d. $-2 \vee -\frac{2}{5}$

2-115 -2

2-116 $-3\frac{2}{3}$

2-117 $-4 \vee 5$

2-118 $3 \vee 10$

2-119 $-\frac{4}{5}$

2-120 $-\frac{1}{5} \vee 9$

2-121 $-\frac{17}{8} \vee 0$

2-122 $-5 \vee 2$

2-123 $0 \vee 4\frac{1}{3}$

2-124 $-7 \vee -2$

2-125 $-2 \vee 5$

2-126 $-2\frac{1}{2}$

2-127 $-5 \vee 14$

2-128 $\pm\frac{3}{4}$

2-129 $-5 \vee 8$

3 Stelsels vergelijkingen

3-1 a. $(-1, -\frac{1}{2})$

b. $(13, 6)$

3-2 a. $(1, 2)$

b. $(-\frac{1}{2}, 7)$

3-3 a. $(4, 1)$

b. $(1, -1)$

3-4 a. $(0, 1)$

b. $(2, 3)$

3-5 a. $(1, 4)$

b. $(4, 1)$

3-6 a. $(-4, 8)$

b. $(0, -2)$

c. $(6, 1)$

d. $(-1, 2)$

c. $(4, -1)$

d. $(2, 4)$

c. $(2\frac{2}{3}, \frac{2}{3})$

d. $(15, 2)$

c. $(-1, 1)$

d. $(3, -4)$

c. $(2, 3)$

d. $(7, 6)$

c. $(11, -6)$

d. $(1, 7)$

e. $(1, \frac{1}{2})$

f. $(3, 1)$

e. $(3, -1)$

f. $(-5, 7)$

e. $(6, 7)$

f. $(6, 5)$

e. $(-1, 2)$

f. $(10, 12)$

e. $(2, 3)$

f. $(8, 7)$

e. $(6, 2)$

f. $(0, -\frac{1}{3})$

3-7	a. (3,4)	c. (1,2)	e. (1,-2)
	b. (3,-4)	d. (5,-6)	f. (7,-8)
3-8	a. (0,0)	c. (0,1)	e. (2,0)
	b. (1,2)	d. (1,10)	f. (2,9)
3-9	a. $x = 4 - 5y$	c. $x = \frac{3}{4}y$	e. $x = 3y - 3$
	b. $x = 3 + 4y$	d. $x = \frac{1}{3}(5 - 7y)$	f. $x = 1\frac{2}{7} - \frac{1}{7}y$
3-10	a. $x = 4 - \frac{1}{2}y$	c. $x = 3 + \frac{1}{4}y$	e. $x = 1\frac{1}{2}y - 7\frac{1}{2}$
	b. $x = -\frac{3}{7} - \frac{3}{7}y$	d. $x = 1\frac{1}{3}y - 4$	f. $x = \frac{1}{9}(5y - 160)$
3-11	a. (5,1)	c. (-2,1)	e. ($\frac{1}{2}$,3)
	b. (5,-4)	d. (0,7)	f. (5,8)
3-12	a. (-2,1)	c. (1,1)	e. (2,1)
	b. (4,-3)	d. (0,2)	f. (3,1)
3-13	a. (1,- $\frac{1}{2}$)	c. (1,-2)	e. (7,2)
	b. (2,1)	d. (1,3)	f. (6,0)
3-14	a. (5,22)	c. (0,7)	e. (1,5)
	b. (2,6)	d. (3,7)	f. (0,0)
3-15	a. ($\frac{1}{2}$,4)	c. ($\frac{1}{3}$,3)	e. ($\frac{1}{4}$,2)
	b. ($\frac{1}{5}$,1)	d. ($\frac{2}{3}$,-6)	f. ($\frac{3}{4}$,-12)
3-16	a. ($\frac{4}{5}$,-20)	c. ($\frac{5}{6}$,-30)	e. (1,10)
	b. (10,1)	d. (11,100)	f. (1,101)
3-17	a. strijdig	c. strijdig	e. (1;3)
	b. strijdig	d. strijdig	f. ($\frac{1}{5}$,-2)
3-18	a. strijdig	c. (4;-2)	e. strijdig
	b. ($3\frac{1}{2}$; $\frac{1}{2}$)	d. strijdig	f. (1,-5)
3-19	a. afh.	c. afh.	e. (3;-2)
	b. afh.	d. afh.	f. (1,-3)
3-20	a. (2,1)	c. (4,-3)	e. (0,2)
	b. strijdig	d. (0,0)	f. (3,0)
3-21	a. (8,6)	c. (6,1)	e. (-2,-2)
	b. afhankelijk	d. (4,-3)	f. (0,2)

3-22	a. $(1, -\frac{1}{2})$	c. $(1, -2)$	e. $(7, 2)$
	b. $(2, 1)$	d. $(6, 0)$	f. $(5, 22)$
3-23	a. $(6, 2)$	c. $(1, 7)$	e. $(0, -\frac{1}{3})$
	b. $(3, 4)$	d. $(-4, 8)$	f. $(11, -6)$
3-24	a. $(3, -1)$	c. $(-1, 2)$	e. $(1, -2)$
	b. $(7, 2)$	d. $(3, 1)$	f. $(4, 2)$
3-25	a. $(2, 4)$	c. $(0, -4)$	e. $(3, -1)$
	b. $(-5, -4\frac{1}{4})$	d. $(2, 0)$	f. $(17, -8)$
3-26	a. $(-5\frac{1}{2}, -4)$	c. $(3, 1\frac{2}{3})$	e. afhankelijk
	b. $(-1, -1)$	d. $(-6, 9)$	f. $(-\frac{2}{9}, 1\frac{2}{3})$
3-27	a. $(4, -1)$	c. $(3, -1)$	e. $(1, -6)$
	b. $(1, -2)$	d. $(1, -2)$	f. $(-3, -5)$

3-28	$-1, -3$	3-49	20 liter
3-29	$-19, -11$	3-50	€10.000 en €15.000
3-30	$-11, -5$	3-51	€12.000 en €8.000
3-31	$0, 40$	3-52	€10.000 en €15.000
3-32	$-2, -32$	3-53	€1800 en €600
3-33	$-15, 3\frac{1}{2}$	3-54	80
3-34	$-116, 360$	3-55	57
3-35	€100 en €50	3-56	95 m
3-36	$\frac{5}{12}$	3-57	20 km
3-37	48 en 72	3-58	6 en 12
3-38	17 en 43	3-59	$40^\circ, 50^\circ$ en 90°
3-39	8 en 12	3-60	$50^\circ, 60^\circ$ en 70°
3-40	8 en 16	3-61	6 en 10
3-41	6 en 12	3-62	15 en 9
3-42	25 en 30	3-63	onbepaald, b.v. 15 en 6
3-43	$\frac{4}{8}$	3-64	18
3-44	$\frac{6}{12}$	3-65	68
3-45	240 van 1 euro en 30 van 2 euro	3-66	$\frac{8}{13}$
3-46	36 en 9 jaar	3-67	4
3-47	50 cent	3-68	$\frac{4}{11}$
3-48	6 en 10	3-69	306
		3-70	€30; €18; €12

3-72 $\frac{1}{6}d + \frac{1}{12}d + \frac{1}{7}d + 5 + \frac{1}{2}d + 4 = d$

jeugd 14; baard 7; huwelijk 12; zoon 42; Diophantes 84

3-73 $\frac{3 \times 80}{5 + 3} = 30\text{ct per schotel}$ $5 \times 30 - 80 = 70$ en $3 \times 30 - 80 = 10$

3-74 $\frac{3 \times (14 + 16)}{7 + 8} = 6$ munten per schotel C krijgt: $7 \times 6 - 30 = 12$ munten;

S krijgt: $8 \times 6 - 30 = 18$ munten

3-75 a. $(1; \frac{1}{2}; 2)$

b. $(5; \frac{1}{4}; 6)$

3-76 a. $(2; 3; 6)$

b. $(5; 4; 3)$

3-77 a. $(1, -2, 3)$

b. $(2, -1, 0)$

3-78 a. $(\frac{1}{3}, 4, 5)$

b. $(6, 2, 2)$

3-79 a. $(1; 1; 1)$

b. $(2; 2; -\frac{1}{3})$

3-80 a. $(0; 1; 1)$

b. $(0; 1; 1)$

3-81 a. $(-2; 2; 1)$

b. $(-4; 0; -4)$

3-82 a. $(1; 2; 3)$

b. $(1; 2; 3)$

3-83 a. $(-1; 2; -4)$

b. $(-3; 1; 0)$

3-84 a. $(2; 1; 3)$

b. $(2; 0; 3)$

3-85 a. $(6; 3; 2)$

b. $(5a; 4a; 3a)$

c. $(3; \frac{1}{3}; 4)$

d. $(7; \frac{1}{5}; 8)$

c. $(8; 0; 4)$

d. $(3; 5; 4)$

c. $(2, -1, 4)$

d. $(1, -2, 1)$

c. $(\frac{1}{2}, 10, -1)$

d. $(-1, 2, -3)$

c. $(1; 2; 2)$

d. $2; 1; 2)$

c. $(1; 0; 1)$

d. $(0; 0; 1)$

c. $(0; -3; 3)$

d. $(5; -5; 0)$

c. $(1; 2; 0)$

d. $(3; 2; 1)$

c. $(8; 4; 2)$

d. $(4; \frac{1}{2}; -7)$

c. $(3; 3; 1)$

d. $(1; 3; 5)$

c. $(a; b; c)$

d. $(bc; ac; ab)$

3-86 1; 1; 1

3-87 1; 1; 3

3-88 3; 1; 1

3-89 32; 24; 4

3-90 15; 20; 35

3-91 842

3-92 4

3-93 2: 3

3-94	a. (1; 2; 3; 4)	b. (4; 3; 2; 1)	3-109	48
3-95	5; 5; 5; 4		3-110	25
3-96	$x = y - z - 3$		3-111	19 en 11
3-97	3; 4		3-112	28 en 38
3-98	2; 5		3-113	25 en 9
3-99	3; 2		3-114	6 en 11
3-100	1; 2		3-115	7 en 15
3-101	0; 3		3-116	15 en 45
3-102	-5; 6		3-117	12 en 48
3-103	8 : 3		3-118	13 en 17
3-104	$y = 2x - 3$		3-119	29 en 39
3-105	32; 28		3-120	(8, 24)
3-106	$\frac{3}{4}$		3-121	7 en 10
3-107	55 en 25 jaar		3-122	12.000 en 18.000
3-108	$\frac{15}{20}$		3-123	4000 en 6000
			3-124	250 en 500

4 Herhaling algebra

4-1	a. 11	c. -2
	b. 4	d. -2
4-2	a. $4\frac{1}{2}$	c. $9\frac{1}{9}$
	b. 6	d. 9
4-3	a. -2	c. $3\frac{1}{2}$
	b. 2	d. 4
4-4	a. $4\frac{1}{2}$	c. 1
	b. $2\frac{1}{4}$	d. -3
4-5	a. -2	c. $2\frac{1}{2}$
	b. -4	d. 4
4-6	a. 4	c. $-1\frac{3}{5}$
	b. $1\frac{1}{2}$	d. 6
4-7	a. -16	c. $2\frac{13}{16}$
	b. $146\frac{2}{3}$	d. $14\frac{2}{5}$

4-8 a. -2

b. -25

4-9 a. $-6\frac{2}{3}$

b. -4

4-10 a. $-\frac{5}{4}$

b. -4

4-11 a. 5

c. 15

d. -4

c. 1

d. -2

c. 1

d. -2

b. -9

4-12 $5\frac{1}{2}$

4-13 6

4-14 $4\frac{1}{2}$

4-15 8

4-16 -2

4-17 10

4-18 -45

4-19 0

4-20 $7, 8 \text{ en } 9$

4-21 $18, 19, 20, 21, 22$

4-22 a. $p^2 + 2pq + q^2$

b. $\frac{1}{4}a^2 + 2ab + 4b^2$

4-23 a. $162\frac{9}{16}$

b. $18\frac{1}{16}$

4-24 a. $p^2 - 2pq + q^2$

b. $\frac{16}{25}a^2 - 8ab + 25b^2$

4-25 a. $94\frac{9}{10}$

b. $62\frac{1}{64}$

4-26 a. $p^2 - q^2$

b. $\frac{4}{9}a^2 - \frac{9}{16}b^2$

4-27 a. $80\frac{15}{16}$

b. 9999

4-28 a. $40\frac{1}{9}$

b. $48\frac{40}{49}$

c. $4p^2 + 4pq + q^2$

d. $\frac{4}{9}a^2 + 2ab + \frac{9}{4}b^2$

c. $31\frac{9}{25}$

d. $42\frac{1}{4}$

c. $16p^2 - 40pq + 25q^2$

d. $\frac{1}{16}a^2 - \frac{1}{4}ab + \frac{1}{4}b^2$

c. $40\frac{1}{36}$

d. $14\frac{1}{16}$

c. $4p^2 - q^2$

d. $0,01a^2 - b^2$

c. 999.991

d. 9996

e. $9p^2 + 24pq + 16q^2$

f. $x^4 + 2x^2y^2 + y^4$

e. $87\frac{1}{9}$

f. $68\frac{1}{16}$

e. $9p^2 - 3pq + \frac{1}{4}q^2$

f. $4x^2 - 12xy + 9y^2$

e. $386\frac{7}{9}$

f. $23\frac{1}{5}$

e. $\frac{1}{4}a^2 - b^2$

f. $x^4 - y^6$

e. $99\frac{8}{9}$

f. $35\frac{3}{4}$

c. $47\frac{1}{49}$

d. $3\frac{8}{9}$

- | | |
|---|---|
| <p>4-29 a. $9a^2 - 2ab + \frac{1}{9}b^2$
 b. $16x^2 - \frac{1}{4}y$</p> <p>4-30 a. 9975
 b. $\frac{28\ 224}{169}$</p> <p>4-31 a. $(p + q)^2$
 b. $(4a + 5b)^2$</p> <p>4-32 a. $(2p - 6q)^2$
 b. $(2a + \frac{1}{2}b)(2a - \frac{1}{2}b)$</p> <p>4-33 a. $(\frac{2}{3}a + \frac{3}{2}b)^2$
 b. $(10x + 10y)^2$</p> <p>4-34 a. $(12a - 10b)(12a + 10b)$</p> | <p>c. $4x^2 12xy + 9y^2$
 d. $16a^2 - 32ab + 16b^2$
 c. $\frac{20\ 449}{144}$
 d. 3 999 999
 c. $(a - 3b)^2$
 d. $(4a - 5b)(4a + 5b)$
 c. $(3a - 2b)^2$
 d. $(\frac{1}{2}a - \frac{1}{2}b)^2$
 c. $(\frac{1}{4}a - 0,4b)(\frac{1}{4}a + 0,4b)$
 d. $(12a - 10b)^2$
 b. $(1\frac{1}{2}x - 2\frac{1}{2}y)(1\frac{1}{2}x + 2\frac{1}{2}y)$</p> |
|---|---|

5 Bewijzen in driehoeken en vierhoeken

$$\left. \begin{array}{l} CF = FG \\ \angle AFC = \angle BFG \\ AF = BF \end{array} \right\} \xrightarrow{\text{ZHZ}} \triangle BFG \cong \triangle AFC \text{ dus: } BG = AC \quad \text{q.e.d.}$$

5-3 Teken $\triangle ABC$ met F op het midden van AB. Dan is CF de zwaartelijn uit C. Trek nu de lijnstukken $AD \perp CF$ en $BE \perp CF$. Nu is te bewijzen dat $AD = BE$

Bewijs:

$$\left. \begin{array}{l} AF = BF \text{ (zwaartelijn)} \\ \angle AFD = \angle BFE \text{ (overst. hoek)} \\ \angle D = \angle E = 90^\circ \text{ (afstand)} \end{array} \right\} \xrightarrow{\text{ZHH}} \triangle AFD \cong \triangle BFE \text{ dus: } AD = BE \quad \text{q.e.d.}$$

5-29 $55^\circ, 25^\circ$

8 Kangoeroe opgaven

- 8-1** C
- 8-2** B
- 8-3** C
- 8-4** B
- 8-5** C
- 8-6** A

- 8-7** C
- 8-8** E
- 8-9** E
- 8-10** B
- 8-11** C
- 8-12** E

8-13	C
8-14	C
8-15	D
8-16	D
8-17	D
8-18	D
8-19	C
8-20	E
8-21	C
8-22	D
8-23	C
8-24	D

8-25	D
8-26	C
8-27	C
8-28	C
8-29	B
8-30	B
8-31	C
8-32	A
8-33	E
8-34	E
8-35	A
8-36	C