

# 1

1a	$7x + 3 = 4x + 15$ $3x + 3 = 15$ $3x = 12$ $x = 4$	min 4x min 3 DD 3
1b	$5a + 9 = 8a + 3$ $9 = 3a + 3$ $6 = 3a$ $a = 2$	min 5a min 3 DD 3
1c	$6p + 2 = 5p + 17$ $p + 2 = 17$ $p = 15$	min 5p min 2
1d	$4m - 8 = 2m + 4$ $2m - 8 = 4$ $2m = 12$ $m = 6$	min 2m plus 8 DD 2
1e	$3q + 3 = 8q - 22$ $3 = 5q - 22$ $25 = 5q$ $q = 5$	min 3q plus 22 DD 5
1f	$7h - 12 = h + 36$ $6h - 12 = 36$ $6h = 48$ $h = 8$	min h plus 12 DD 6
1g	$9z + 13 = 7z - 15$ $2z + 13 = -15$ $2z = -28$ $z = -14$	min 7z min 13 DD 2
1h	$-8d + 7 = 2d + 47$ $7 = 10d + 47$ $-40 = 10d$ $d = -4$	plus 8d min 47 DD 10

1i	$6w - 7 = 4w - 21$	min 4w
	$2w - 7 = -21$	plus 7
	$2w = -14$	DD 2
	$w = -7$	

1j	$12 + 2k = -5k - 23$	plus 5k
	$12 + 7k = -23$	min 12
	$7k = -35$	DD 7
	$k = -5$	

## 2

2a	$8x + 13 = 3x + 33$	min 3x
	$5x + 13 = 33$	min 13
	$5x = 20$	DD 5
	$x = 4$	

2b	$4a + 13 = 7a + 3$	min 4a
	$13 = 3a + 3$	min 3
	$10 = 3a$	DD 3
	$a = 3\frac{1}{3}$	

2c	$7p + 7 = 5p + 19$	min 5p
	$2p + 7 = 19$	min 7
	$2p = 12$	DD 2
	$p = 6$	

2d	$3m - 7 = m + 13$	min m
	$2m - 7 = 13$	plus 7
	$2m = 20$	DD 2
	$m = 10$	

2e	$5q + 6 = 9q - 32$	min 5q
	$6 = 4q - 32$	plus 32
	$38 = 4q$	DD 4
	$q = 9\frac{1}{2}$	

2f	$9h - 14 = 2h + 35$	min 2h
	$7h - 14 = 35$	plus 14
	$7h = 49$	DD 7

$$h = 7$$

2g	$11z + 23 = 5z - 37$	min 5z
	$6z + 23 = -37$	min 23
	$6z = -60$	DD 6
	$z = -10$	

2h	$-8d + 9 = 3d + 42$	plus 8d
	$9 = 11d + 42$	min 42
	$-33 = 11d$	DD 11
	$d = -3$	

2i	$9w - 31 = 6w - 18$	min 6w
	$3w - 31 = -18$	plus 31
	$3w = 13$	DD 3
	$d = 4\frac{1}{3}$	

2j	$5 + 4k = -5k - 67$	plus 5k
	$5 + 9k = -67$	min 5
	$9k = -72$	DD 9
	$k = -8$	

### 3

3a	$8x - 43 = 3x - 25$	min 3x
	$5x - 43 = -25$	plus 43
	$5x = 18$	DD 5
	$x = 3,6$	

3b	$4a + 19 = 7a - 14$	min 4a
	$19 = 3a - 14$	plus 14
	$33 = 3a$	DD 3
	$a = 11$	

3c	$-5p - 12 = p + 15$	plus 5p
	$-12 = 6p + 15$	min 15
	$-27 = 6p$	DD 6
	$p = -4,5$	

3d	$27 - 4m = 2m + 3$	plus 4m
	$27 = 6m + 3$	min 3
	$24 = 6m$	DD 6
	$m = 4$	

3e	$6q + 2 = -2q - 26$ $8q + 2 = -26$ $8q = -28$ $q = -3,5$	plus 2q min 2 DD 8
3f	$2h - 10 = 16 - 3h$ $5h - 10 = 16$ $5h = 26$ $h = 5,2$	plus 3h plus 10 DD 5
3g	$-2z + 17 = -4z - 15$ $2z + 17 = -15$ $2z = -32$ $z = -16$	plus 4z min 17 DD 2
3h	$-5d + 32 = 3d - 32$ $32 = 8d - 32$ $64 = 8d$ $d = 8$	plus 5d plus 32 DD 8
3i	$12 - w = 5w + 12$ $12 = 6w + 12$ $0 = 6w$ $w = 0$	plus w min 12 DD 6
3j	$31 + -4k = -7k - 23$ $31 + 3k = -23$ $3k = -54$ $k = -18$	plus 7k min 31 DD 3

## 4

4a	$6x - 37 = 4x - 24$ $2x - 37 = -24$ $2x = 13$ $x = 6\frac{1}{2}$	min 4x plus 37 DD 2
4b	$14a + 67 = 9a - 13$ $5a + 67 = -13$ $5a = -80$	min 9a min 67 DD 5

$$a = -16$$

- 4c  $-6p - 17 = p + 18$  plus 6p  
 $-17 = 7p + 18$  min 18  
 $-35 = 7p$  DD 7  
 $p = -5$
- 4d  $45 - 9m = 4m + 6$  plus 9m  
 $45 = 13m + 6$  min 6  
 $39 = 13m$  DD 13  
 $m = 3$
- 4e  $8q + 5 = -4q - 25$  plus 4q  
 $12q + 5 = -25$  min 5  
 $12q = -30$  DD 12  
 $q = -2\frac{1}{2}$
- 4f  $5h - 30 = 46 - 5h$  plus 5h  
 $10h - 30 = 46$  plus 30  
 $10h = 76$  DD 10  
 $h = 7,6$
- 4g  $-3z + 26 = -6z - 16$  plus 6z  
 $3z + 26 = -16$  min 26  
 $3z = -42$  DD 3  
 $z = -14$
- 4h  $-7d + 42 = 8d - 33$  plus 7d  
 $42 = 15d - 33$  plus 33  
 $75 = 15d$  DD 15  
 $d = 5$
- 4i  $19 - w = 3w + 41$  plus w  
 $19 = 4w + 41$  min 41  
 $22 = 4w$  DD 4  
 $w = 5\frac{1}{2}$
- 4j  $19 + -9k = -6k - 32$  plus 9k  
 $19 = 3k - 32$  plus 32  
 $51 = 3k$  DD 3  
 $k = 17$

# 5

- 5a  $\frac{1}{2}x - 4 = \frac{1}{4}x + 12$  maal 4  
 $2x - 16 = x + 48$  min x  
 $x - 16 = 48$  plus 16  
 $x = 64$
- 5b  $2(a + 3) = 5a - 5$  haakjes weg  
 $2a + 6 = 5a - 5$  min 2a  
 $6 = 3a - 5$  plus 5  
 $11 = 5a$  DD 5  
 $a = 3\frac{2}{3}$
- 5c  $2\frac{2}{3}p - \frac{1}{3} = 3\frac{1}{3}p + 1$  maal 3  
 $8p - 1 = 10p + 3$  min 8p  
 $-1 = 2p + 3$  min 3  
 $-4 = 2p$  DD 2  
 $p = -2$
- 5d  $5(7 - m) = 2(m + 7)$  haakjes weg  
 $35 - 5m = 2m + 14$  plus 5m  
 $35 = 7m + 14$  min 14  
 $21 = 7m$  DD 3  
 $m = 3$
- 5e  $3(q + 2) - 4q = q - 6$  haakjes weg  
 $3q + 6 - 4q = q - 6$  soort bij soort  
 $-q + 6 = q - 6$  plus q  
 $6 = 2q - 6$  plus 6  
 $12 = 2q$  DD 2  
 $q = 6$
- 5f  $-3(h - 2\frac{1}{3}) = 4(3\frac{1}{2} - h)$  haakjes weg  
 $-3h + 7 = 14 - 4h$  plus 4h  
 $h + 7 = 14$  min 7  
 $h = 7$
- 5g  $5 - 4z + 17 = -3z - 15 + z$  soort bij soort  
 $22 - 4z = -2z - 15$  plus 4z  
 $22 = 2z - 15$  plus 15  
 $37 = 2z$  DD 2

$$z = 18^{1/2}$$

- 5h  $3(2d + 4) = 2(d - 6) + 6$  haakjes weg  
 $6d + 12 = 2d - 12 + 6$  soort bij soort  
 $6d + 12 = 2d - 6$  min 2d  
 $4d + 12 = -6$  min 12  
 $4d = -18$  DD 4  
 $d = -4^{1/2}$
- 5i  $^{1/4}(12 - w) = 2^{3/4}w + 12$  haakjes weg  
 $^{3-1/4}w = 2^{3/4}w + 12$  maal 4  
 $12 - w = 11w + 48$  plus w  
 $12 = 12w + 48$  min 48  
 $-36 = 12w$  DD 12  
 $w = -3$
- 5j  $3(k - 3) - 5(k - 4) = 4(k - 1)$  haakjes weg  
 $3k - 9 - 5k + 20 = 4k - 4$  soort bij soort  
 $-2k + 11 = 4k - 4$  plus 2k  
 $11 = 6k - 4$  plus 4  
 $15 = 6k$  DD 6  
 $k = 2^{1/2}$

## 6

- 6a  $^{1/3}x - 5 = ^{3/4}x + 15$  maal 12  
 $4x - 60 = 9x + 180$  min 4x  
 $-60 = 5x + 180$  min 180  
 $-240 = 5x$  DD 5  
 $x = -48$
- 6b  $7(a + 5) = 4a - 7$  haakjes weg  
 $7a + 35 = 4a - 7$  min 4a  
 $3a + 35 = -7$  min 35  
 $3a = -42$  DD 3  
 $a = -14$
- 6c  $1^{2/3}p - 3^{2/3} = 4^{1/3}p + 3$  maal 3  
 $5p - 11 = 13p + 9$  min 5p

	$-11 = 8p + 9$ $-20 = 8p$ $p = -2\frac{1}{2}$	min 9 DD 8
6d	$9(5 - m) = 5(m + 2)$ $45 - 9m = 5m + 10$ $45 = 14m + 10$ $35 = 14m$ $m = 2\frac{1}{2}$	haakjes weg plus 9m min 10 DD 14
6e	$7(q + 3) - 5q = q - 9$ $7q + 21 - 5q = q - 9$ $2q + 21 = q - 9$ $q + 21 = -9$ $q = -30$	haakjes weg soort bij soort min q min 21
6f	$-4(h - 2\frac{3}{4}) = 5(1\frac{1}{2} - h)$ $-4h + 11 = 7\frac{1}{2} - 5h$ $-8h + 22 = 15 - 10h$ $2h + 22 = 15$ $2h = -7$ $h = -3\frac{1}{2}$	haakjes weg maal 2 plus 10h min 22 DD 2
6g	$13 - 5z + 21 = -8z - 42 + z$ $34 - 5z = -7z - 42$ $34 + 2z = -42$ $2z = -76$ $z = -38$	soort bij soort pls 7z min 34 DD 2
6h	$5(3d + 7) = 4(d - 9) + 5$ $15d + 35 = 4d - 36 + 5$ $15d + 35 = 4d - 31$ $11d + 35 = -31$ $11d = -66$ $d = -6$	haakjes weg soort bij soort min 4d min 35 DD 11
6i	$\frac{1}{5}(15 - w) = 2\frac{1}{5}w + 27$ $3 - \frac{1}{5}w = 2\frac{1}{5}w + 27$ $15 - w = 11w + 135$ $15 = 12w + 135$ $-120 = 12w$ $w = -10$	haakjes weg maal 5 plus w min 135 DD 12

6j	$4(k - 6) - 6(k - 3) = 3(k - 4)$ $4k - 24 - 6k + 18 = 3k - 12$ $-2k - 6 = 3k - 12$ $-6 = 5k - 12$ $6 = 5k$ $k = 1,2$	haakjes weg soort bij soort plus 2k plus 12 DD 5
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# 7

7a	$3b - 17 > 7$ $3b - 17 = 7$ $3b = 24$ $b = 8$ fout ----- 8 ----- goed $b > 8$
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7b	$28 - 4x > 0$ $28 - 4x = 0$ $28 = 4x$ $x = 7$ goed ----- 7 ----- fout $x < 7$
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7c	$3(y - 4) < 15$ $3(y - 4) = 15$ $3y - 12 = 15$ $3y = 27$ $y = 9$ goed ----- 9 ----- fout $y < 9$
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7d	$51 < 7x + 2$ $51 = 7x + 2$ $49 = 7x$ $x = 7$ fout ----- 7 ----- goed $x > 7$
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7e	$-17 + 4h > 11 + 3h$ $-17 + 4h = 11 + 3h$
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$$\begin{aligned} -17 + h &= 11 \\ h &= 28 \\ \text{fout} &\text{----- } 28 \text{----- goed} \\ h &> 28 \end{aligned}$$

$$\begin{aligned} 7f \quad 6(p - 4) &< 3p - 21 \\ 6(p - 4) &= 3p - 21 \\ 6p - 24 &= 3p - 21 \\ 3p - 24 &= -21 \\ 3p &= 3 \\ p &= 1 \\ \text{goed} &\text{----- } 1 \text{----- fout} \\ p &< 1 \end{aligned}$$

$$\begin{aligned} 7g \quad 8w - 12 &< 12w - 36 \\ 8w - 12 &= 12w - 36 \\ -12 &= 4w - 36 \\ 24 &= 4w \\ w &= 6 \\ \text{fout} &\text{----- } 6 \text{----- goed} \\ w &> 6 \end{aligned}$$

$$\begin{aligned} 7h \quad 11 - q &> 14 - 3q \\ 11 - q &= 14 - 3q \\ 11 + 2q &= 14 \\ 2q &= 3 \\ q &= 1,5 \\ \text{fout} &\text{----- } 1,5 \text{----- goed} \\ q &> 1,5 \end{aligned}$$

$$\begin{aligned} 7i \quad 8x - 6 &> -3(4 - 2x) \\ 8x - 6 &= -3(4 - 2x) \\ 8x - 6 &= -12 + 6x \\ 2x - 6 &= -12 \\ 2x &= -6 \\ x &= -3 \\ \text{fout} &\text{----- } -3 \text{----- goed} \\ x &> -3 \end{aligned}$$

$$\begin{aligned} 7j \quad 4k - k + 5k + 4 &> 3k - 11 \\ 4k - k + 5k + 4 &= 3k - 11 \\ 8k + 4 &= 3k - 11 \end{aligned}$$

$$5k + 4 = -11$$

$$5k = -15$$

$$k = -3$$

goed ----- -3 ----- fout

$$k < -3$$

## 8

8a

$$2x - 3 = -\frac{1}{2}x + 4\frac{1}{2}$$

$$4x - 6 = -x + 9$$

$$5x - 6 = 9$$

$$5x = 15$$

$$x = 3$$

8b

$$-\frac{1}{2}x + 4\frac{1}{2} = \frac{2}{3}x + 10\frac{1}{3}$$

$$-3x + 27 = 4x + 62$$

$$27 = 7x + 62$$

$$-35 = 7x$$

$$x = -5$$

8c

$$2x - 3 = \frac{2}{3}x + 10\frac{1}{3}$$

$$6x - 9 = 2x + 31$$

$$4x - 9 = 31$$

$$4x = 40$$

$$x = 10$$

## 9

9a

$$\frac{3}{4}x > x - 2$$

$$\frac{3}{4}x = x - 2$$

$$3x = 4x - 8$$

$$-x = -8$$

$$x = 8$$

fout ----- 8 ----- goed

$$x > 8$$

9b

$$-2x - 11 > x - 2$$

$$-2x - 11 = x - 2$$

$$-11 = 3x - 2$$

$$-9 = 3x$$

$$x = -3$$

goed ----- -3 ----- fout

$$x < -3$$

9c

$$-2x - 11 > \frac{3}{4}x$$

$$-2x - 11 = \frac{3}{4}x$$

$$-8x - 44 = 3x$$

$$-44 = 11x$$

$$x = -4$$

goed ----- -4 ----- fout

$$x < -4$$