Diagnostische toets

bladzijde 34

1 a $8x - 12 = 5x - 21$
$8x - 5x = -21 + 12$
$3x = -9$
$x = -3$

b $-4a - 8 = -a - 8$
$-4a + a = -8 + 8$
$-3a = 0$
$a = 0$

2 a $5(x - 3) = 7x + 8$
$5x - 15 = 7x + 8$
$5x - 7x = 8 + 15$
$-2x = 23$
$x = -11{,}5$

b $2(3x - 1) = -2x + 3(x - 9)$
$6x - 2 = -2x + 3x - 27$
$6x + 2x - 3x = -27 + 2$
$5x = -25$
$x = -5$

c $5{,}2x - 1{,}5 = 2{,}7x + 2$
$5{,}2x - 2{,}7x = 2 + 1{,}5$
$2{,}5x = 3{,}5$
$x = \frac{3{,}5}{2{,}5} = 1{,}4$

d $1\frac{2}{5}x + 7 = 21$
$1\frac{2}{5}x = 21 - 7$
$1\frac{2}{5}x = 14$
$x = \frac{14}{1\frac{2}{5}} = 10$

3 $\frac{2}{3}x - 2 = \frac{1}{5}x - \frac{3}{5}$
$15 \cdot \frac{2}{3}x - 15 \cdot 2 = 15 \cdot \frac{1}{5}x - 15 \cdot \frac{3}{5}$
$10x - 30 = 3x - 9$
$10x - 3x = -9 + 30$
$7x = 21$
$x = 3$

4 tabel l

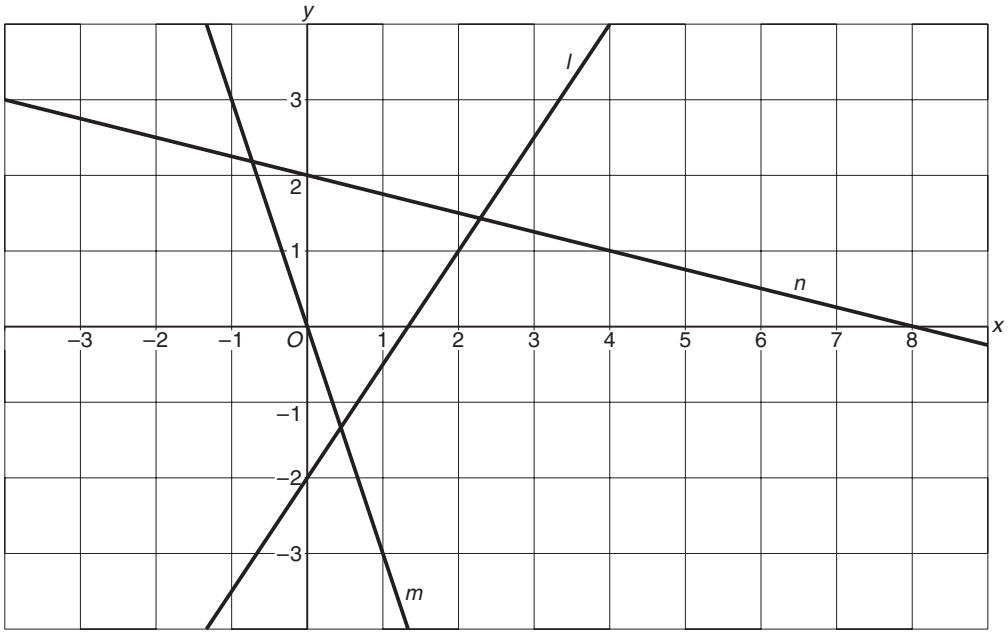
x	0	2
y	-2	1

tabel m

x	0	1
y	0	-3

tabel n

x	0	4
y	2	1



5 a $x = -b$ geeft $y = -8 \cdot -6 + 13 = 48 + 13 = 61$
Dus $A(-6, 61)$ ligt op lijn l.
b $x = 11$ geeft $y = -8 \cdot 11 + 13 = -88 + 13 = -75$.
Dus $y_B = -75$.

6 a l: $y = ax + b$
Het snijpunt met de y-as is $(0,4)$, dus $b = 4$.
l door $(0, 4)$ en $(5, 1)$, dus $a = \dfrac{\text{verticaal}}{\text{horizontaal}} = \dfrac{-3}{5} = -0{,}6$
Je krijgt l: $y = -0{,}6x + 4$.

m: $y = ax + b$
Het snijpunt met de y-as is $(0, 0)$, dus $b = 0$.
m door $(0, 0)$ en $(2, 3)$, dus $a = \dfrac{\text{verticaal}}{\text{horizontaal}} = \dfrac{3}{2} = 1{,}5$
Je krijgt m: $y = 1{,}5x$.
b k: $y = ax + b$
Evenwijdig met l dus $a = -0{,}6$.
Snijpunt met de y-as is $(0, -350)$, dus $b = -350$.
Je krijgt k: $y = -0{,}6x - 350$.

7 a $B = na + b$
Snijpunt met B-as is $(0, 20)$, dus $b = 20$.
Door $(0, 20)$ en $(5, 80)$, dus $n = \dfrac{\text{verticaal}}{\text{horizontaal}} = \dfrac{60}{5} = 12$
$B = 12a + 20$
b $W = at + b$
Snijpunt met N-as is $(0, 400)$, dus $b = 400$.
Door $(0, 400)$ en $(50, 0)$, dus $a = \dfrac{\text{verticaal}}{\text{horizontaal}} = \dfrac{-400}{50} = -8$.
$N = -8t + 400$

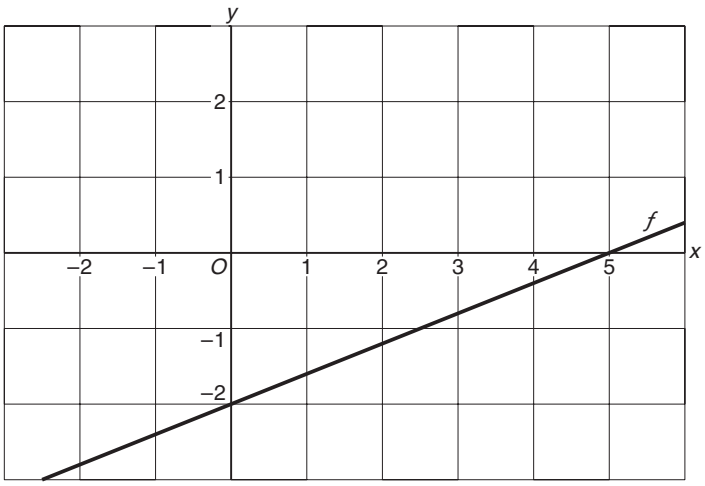
8 k: $y = ax + b$
Omdat k evenwijdig is met l: $y = 10x + 20$ is $a = 10$.
Je krijgt $\left.\begin{array}{l} k\text{: } y = 10x + b. \\ R(-4, 20) \end{array}\right\}$ $10 \cdot 4 + b = 20$
$-40 + b = 20$
$b = 20 + 40$
$b = 60$

9 a $0{,}4x + 1 = -1{,}2x + 3$
$0{,}4x + 1{,}2x = 3 - 1$
$1{,}6x = 2$
$x = \frac{2}{1{,}6} = 1{,}25$
$x = 1{,}25$ invullen in $y = 0{,}4x + 1$ geeft $y = 0{,}4 \cdot 1{,}25 + 1 = 1{,}5$
Dus $S(1{,}25; 1{,}5)$.
b $-1{,}2x + 3 = 0$
$-1{,}2x = -3$
$x = \frac{-3}{-1{,}2} = 2{,}5$
Dus $T(2{,}5; 0)$.

10 a $f(5) = -2 \cdot 5 + 5 = -10 + 5 = -5$
$g(3) = 5 \cdot 3 = 15$
$f(-1) = -2 \cdot -1 + 5 = 2 + 5 = 7$
b $y = -2x + 5$
c $g(-8) = 5 \cdot -8 = -40$

11 a tabel f

x	0	5
y	-2	0



b $f(-30) = 0{,}4 \cdot -30 - 2 = -12 - 2 = -14$
c $x = -40$ geeft $y = 0{,}4 \cdot -40 - 2 = -16 - 2 = -18$
Dus $A(-40, -18)$ ligt op lijn f.
d $0{,}4x - 2 = 20$
$0{,}4x = 20 + 2$
$0{,}4x = 22$
$x = \frac{22}{0{,}4} = 55$
Dus $x_B = 55$.

12 a Snijpunt x-as: $-8x + 36 = 0$

$-8x = -36$

$x = \frac{-36}{-8} = 4{,}5$

Dus snijpunt grafiek f met x-as $A(4{,}5; 0)$.

snijpunt y-as $f(0) = -8 \cdot 0 + 36 = 36$

Dus snijpunt grafiek f met y-as $B(0, 36)$.

b Snijpunt x-as: $3(5 - x) = 0$

$15 - 3x = 0$

$-3x = -15$

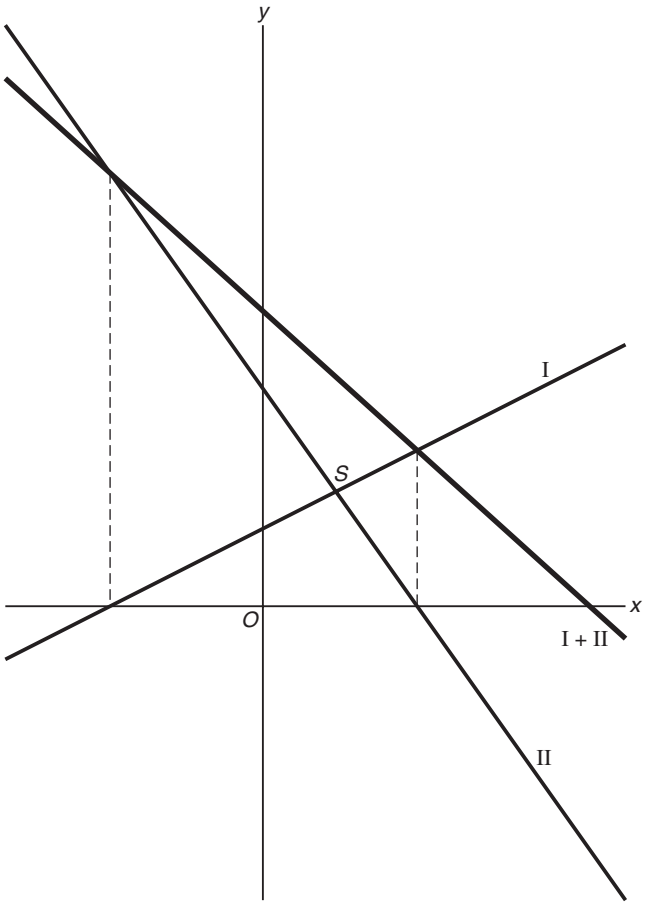
$x = \frac{-15}{-3} = 5$

Dus $P(5, 0)$.

snijpunt y-as: $g(0) = 3(5 - 0) = 15$

Dus $Q(0, 15)$.

13 a



b grafiek I $y = 0{,}5x + 1$

grafiek II $y = -1{,}5x + 3$ +

somgrafiek 1 + II: $y = -x + 4$

c grafiek I $y = 0{,}5x + 1$

grafiek II $y = -1{,}5x + 3$ –

verschilgrafiek I – II: $y = 2x - 2$

grafiek II $y = -1{,}5x + 3$

grafiek I $y = 0{,}5x + 1$ –

verschilgrafiek II – I: $y = -2x + 2$

d grafiek I $y = 0{,}5x + 1$

grafiek III $\underline{y = -5x - 6}$ +

somformule I +III: $y = -4{,}5x - 5$

e grafiek II $y = -1{,}5x + 3$

grafiek III $\underline{y = -5x - 6}$ −

verschilformule II −III: $y = 3{,}5x + 9$