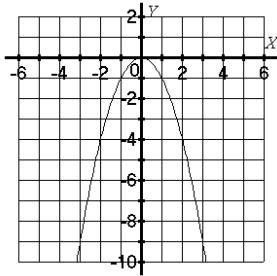


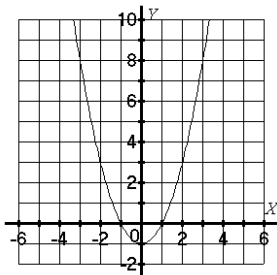
Antwoorden

Opdracht 17.1



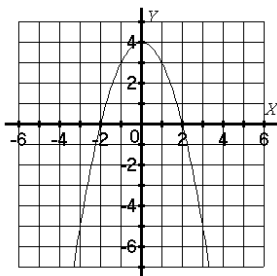
Opdracht 17.2

a.



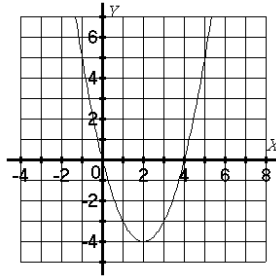
X-as: $(-1, 0)$ $(1, 0)$
Y-as: $(0, -1)$

b.



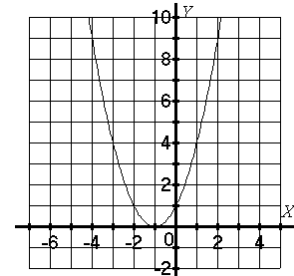
X-as: $(-2, 0)$ $(2, 0)$
Y-as: $(0, 4)$

c.



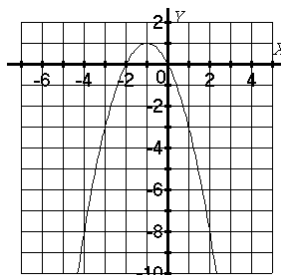
X-as: $(0, 0)$ $(4, 0)$
Y-as: $(2, -4)$

b.



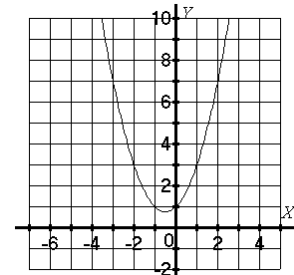
X-as: $(-1, 0)$
Y-as: $(0, 1)$

d.



X-as: $(-2, 0)$ $(0, 0)$
Y-as: $(0, 0)$

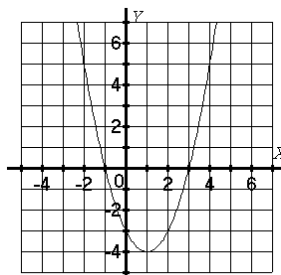
c.



X-as: geen snijpunten
Y-as: $(0, 1)$

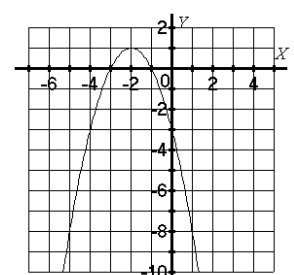
Opdracht 17.3

a.



X-as: $(-1, 0)$ $(3, 0)$
Y-as: $(0, -3)$

d.



X-as: $(-3, 0)$ $(-1, 0)$
Y-as: $(0, -3)$

Opdracht 17.4

- a. dal; min; (0, -1)
- b. berg; max; (0, 4)
- c. dal; min; (2, -4)
- d. berg; max; (-1, 1)

Opdracht 17.5

- a. dal; min; (1, -4)
- b. dal; min; (-1, 0)
- c. dal; min; $\approx(-0,5, 0,8)$
- d. berg; max; (-2, 1)

Opdracht 17.6

Klopt

Opdracht 17.7

-

Opdracht 17.8

- a. $(x+1)(x-1) = 0$
 $\Leftrightarrow x = -1 \vee x = 1$
- b. $-(x+2)(x-2) = 0$
 $\Leftrightarrow x = -2 \vee x = 2$
- c. $x(x-4) = 0$
 $\Leftrightarrow x = 0 \vee x = 4$
- d. $-x(x+2) = 0$
 $\Leftrightarrow x = 0 \vee x = -2$

Opdracht 17.9

- a. $(x-3)(x+1) = 0$
 $\Leftrightarrow x = 3 \vee x = -1$
- b. $(x+1)^2 = 0$
 $\Leftrightarrow x = -1$
- c. niet mogelijk
- d. $-(x+1)(x+3) = 0$
 $\Leftrightarrow x = -1 \vee x = -3$

Opdracht 17.10

- a. $(x-1)(x-4) = 0$
 $\Leftrightarrow x = 1 \vee x = 4$
- b. $(x+1)(x+2) = 0$
 $\Leftrightarrow x = -1 \vee x = -2$
- c. $-(x+2)(x+3) = 0$
 $\Leftrightarrow x = -2 \vee x = -3$
- d. $-(x+8)(x-2) = 0$
 $\Leftrightarrow x = -8 \vee x = 2$

Opdracht 17.11

- a. $x_{1,2} = \frac{0 \pm \sqrt{0^2 - 4 \times 1 \times -1}}{2 \times 1}$
 $\Leftrightarrow x = -1 \vee x = 1$
- b. $x_{1,2} = \frac{0 \pm \sqrt{0^2 - 4 \times -1 \times 4}}{2 \times -1}$
 $\Leftrightarrow x = -2 \vee x = 2$
- c. $x_{1,2} = \frac{4 \pm \sqrt{(-4)^2 - 4 \times 1 \times 0}}{2 \times 1}$
 $\Leftrightarrow x = 0 \vee x = 4$
- d. $x_{1,2} = \frac{2 \pm \sqrt{4 - 4 \times -1 \times 0}}{2 \times -1}$
 $\Leftrightarrow x = 0 \vee x = -2$

Opdracht 17.12

- a. $x_{1,2} = \frac{2 \pm \sqrt{4+12}}{2}$
 $\Leftrightarrow x = -1 \vee x = 3$
- b. $x_{1,2} = \frac{-2 \pm \sqrt{4-4}}{2}$
 $\Leftrightarrow x = -1$
- c. $x_{1,2} = \frac{-1 \pm \sqrt{-3}}{2} = ???$
- d. $x_{1,2} = \frac{4 \pm \sqrt{16-12}}{-2}$
 $\Leftrightarrow x = -3 \vee x = -1$

Opdracht 17.13

- a. $D < 0 \Rightarrow$ geen snijpunten met X-as
(0, 5,1)
- b. (-0,59 , 0) (3,48 , 0)
(0, 3,7)
- c. (3,00 , 0) (3,00 , 0)
(0, 5,40)

Opdracht 17.14

- $D = 0 \Leftrightarrow b^2 - 4 \times 1 \times 36 = 0$
 $\Leftrightarrow b^2 = 144 \Leftrightarrow b = \pm \sqrt{144}$
 $\Leftrightarrow b = 12 \vee b = -12$

Opdracht 17.15

- a. $x_{\text{sym}} = \frac{-1+1}{2} = 0$
 $y_{\text{top}} = 0^2 - 1 = -1$
- b. $x_{\text{sym}} = \frac{-2+2}{2} = 0$
 $y_{\text{top}} = -0^2 + 4 = 4$
- c. $x_{\text{sym}} = \frac{0+4}{2} = 2$
 $y_{\text{top}} = 2^2 - 4 \times 2 = -4$
- d. $x_{\text{sym}} = \frac{-2+0}{2} = -1$
 $y_{\text{top}} = -(-1)^2 - 2 \times -1 = 1$

Opdracht 17.16

- a. $x_{\text{sym}} = \frac{-1+3}{2} = 1$
 $y_{\text{top}} = 1 - 2 - 3 = -4$
- b. $x_{\text{sym}} = \frac{-1+-1}{2} = -1$
 $y_{\text{top}} = 1 - 2 + 1 = 0$
- c. $x_{\text{sym}} = \frac{-1}{2 \times 1} = -\frac{1}{2}$
 $y_{\text{top}} = \frac{1}{4} - \frac{1}{2} + 1 = \frac{3}{4}$
- d. $x_{\text{sym}} = \frac{-3+-1}{2} = -2$
 $y_{\text{top}} = -4 + 8 - 3 = 1$

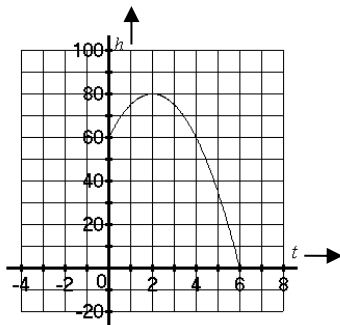
Opdracht 17.17

- a. (0,40 , 4,76)
- b. (1,44 , 7,46)
- c. (3,00 , 0,00)

Opdracht 17.18

- a. $a = -5, b = 20, c = 60$
- b. $t_{\text{sym}} = 2 \text{ s}$
- c. $h_{\text{top}} = 80 \text{ m}$
- d. $t = -2$ (voldoet niet)
 $\vee t = 6 \Rightarrow t = 6 \text{ s}$
- e. $t = 0$ (start beweging)
 $\vee t = 4 \Rightarrow t = 4 \text{ s}$

f.



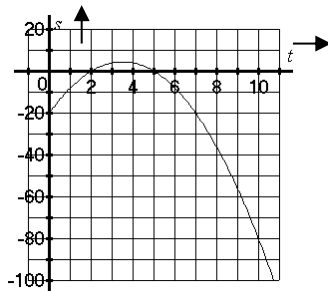
Opdracht 17.19

a. $t = 2 \text{ s} \vee t = 5 \text{ s}$

b. $t = 0 \text{ s} \vee t = 7 \text{ s}$

c. $t = 3\frac{1}{2} \text{ s} \Rightarrow s_t = 4\frac{1}{2} \text{ m}$

d.



Opdracht 17.20

a. $l = 50 - b$

b. $A(b) = (50 - b)b$
 $= 50b - b^2$

c. $b = 25 \text{ cm} \Rightarrow$

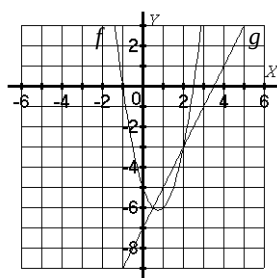
$A(b) = 625 \text{ cm}^2$

is een vierkant.

Opdracht 17.21

a. $(\frac{1}{2}, -6) (2, -3)$

b.



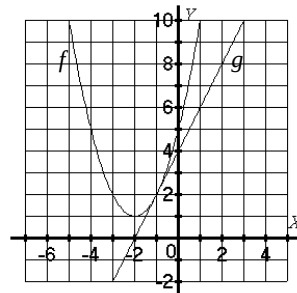
Opdracht 17.22

a. $D < 0 \Rightarrow$ geen
snijpunten met X -as
(0, 5)

b. $(-2, 0) (0, 4)$

c. $(-2, 1)$ is minimum

d.



e. $(-1, 2)$

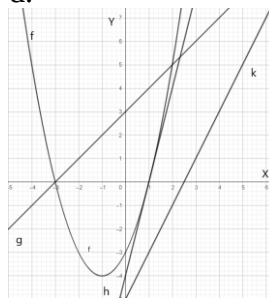
Opdracht 17.23

a. $(-3, 0) (2, 5)$

b. $(1, 0)$

c. $\emptyset$

d.



Opdracht 17.24

$p = 0 \Rightarrow (-1, 4)$

$p = -4 \Rightarrow (1, 0)$

Opdracht 17.25

$q = -6\frac{1}{4} \Rightarrow (3\frac{1}{2}, \frac{3}{4})$

Opdracht 17.26

$x = -1 \vee x = -\frac{b}{a}$