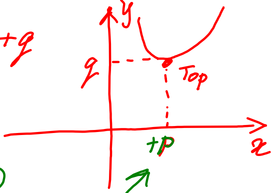
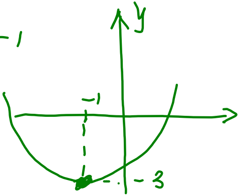
$y=(x-p)^2+q$

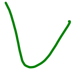
$-(-p)=+p$



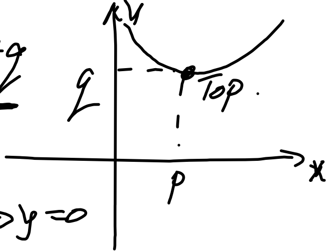
$y=(x+3)^2-1$



$y=ax^2+bx+c$

$a>0$	
$a<0$	

$y = (x-p)^2 + q$



Snijp x-as $\Rightarrow y = 0$

$(x-p)^2 + q = 0$

$(x-p)^2 = -q$

$\sqrt{}$

$y = (x-3)^2 + 25$

$(x-3)^2 + 25 = 0$.

merkw.pr.

$A^2 - B^2$

$(x-3)^2 = -25$

$$x^2-13x-7=0$$

$$\Big\downarrow{*\tfrac{1}{2}}$$

$$\frac{13}{2} \xrightarrow{kw} \left(\frac{13}{2}\right)^2$$

$$x^2-13x+\left(\frac{13}{2}\right)^2-\left(\frac{13}{2}\right)^2-7=0$$

$$\left(x-\frac{13}{2}\right)^2-\frac{169}{4}-\frac{28}{4}=0$$

6,5

$x^2 - 3x + 2 = 0$

$$\left.\begin{array}{l} a = 1 \\ b = -3 \\ c = 2 \end{array}\right\} \longrightarrow D = b^2 - 4ac$$

$$D = (-3)^2 - 4 \cdot 1 \cdot 2$$

$$= 9 - 8 \Longrightarrow D = 1$$

$-3^2 \longrightarrow -9$

$(-3)^2 \longrightarrow 9$

$$\frac{2}{3}x^2+2x-3=0 \quad \Big| *3$$

$$2x^2+6x-9=0$$

$$\left.\begin{array}{l} a=\frac{2}{3} \\ b=2 \\ c=-3 \end{array}\right\} \Rightarrow D=2^2-4\cdot\frac{2}{3}\cdot(-3)$$

$$=4+8 \Rightarrow D=12.$$

$$\left.\begin{array}{l} a=2 \\ b=6 \\ c=-9 \end{array}\right\} \quad D=36-4\cdot 2(-9)$$

$$=36+72=108$$

$$\begin{array}{r|l} 108 & 2 \\ 54 & 2 \\ 27 & 3^3 \\ 1 & \end{array}$$

$$x_{1,2}=\frac{-b\pm\sqrt{D}}{2a}$$

$$=\frac{-2\pm\sqrt{12}}{2\cdot\frac{2}{3}}$$

$$=\frac{-2\pm 2\sqrt{3}}{2\cdot\frac{2}{3}}=\frac{\cancel{2}(-1\pm\sqrt{3})}{\cancel{2}\cdot\frac{2}{3}}$$

$$=(-1\pm\sqrt{3})*\frac{3}{2}$$

$$x_{1,2}=\frac{-6\pm 6\sqrt{3}}{2\cdot 2}$$

$$=-\frac{3}{2}\pm\frac{3}{2}\sqrt{3}$$

$$x_1=-\frac{3}{2}+\frac{3}{2}\sqrt{3} \leftarrow$$

$$x_2=-\frac{3}{2}-\frac{3}{2}\sqrt{3} \leftarrow$$

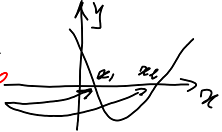
$y = ax^2 + bx + c$

lijn: $y=0$

$ax^2 + bx + c = 0$

↓

x-coördn. snijpunten v/d parabool met x-as $(y=0)$



$\underbrace{x(1-x)}_{\text{parabool}} = -2$

parabool snijdt lijn $y = -2$

$$\left.\begin{array}{l}(\sqrt{x}-1)(\sqrt{x}-3)=1\\ \text{Stel } \underline{\underline{y=\sqrt{x}}}\end{array}\right\} \Rightarrow (y-1)(y-3)=1$$

$y^2 - 4y + 3 = 1$

$y^2 - 4y + 2 = 0$

$$\left.\begin{array}{l}a=1\\ b=-4\\ c=2\end{array}\right\} \rightarrow D = (-4)^2 - 4 \cdot 1 \cdot 2$$

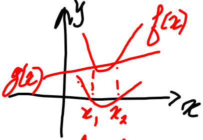
$D = 8$

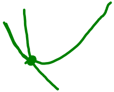
$$y_{1,2} = \frac{-(-4) \pm \sqrt{8}}{2 \cdot 1} = \frac{4 \pm 2\sqrt{2}}{2} = 2 \pm \sqrt{2}$$

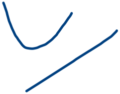
$y_1 = 2 + \sqrt{2} \rightsquigarrow \sqrt{x_1} = 2 + \sqrt{2} \Rightarrow x_1 = (2+\sqrt{2})^2 = 4 + 2\sqrt{2} + 2 = \underline{\underline{6 + 2\sqrt{2}}}$

$y_2 = 2 - \sqrt{2} \rightsquigarrow \sqrt{x_2} = 2 - \sqrt{2} \Rightarrow x_2 = (2-\sqrt{2})^2 = 4 - 2\sqrt{2} + 2 = \underline{\underline{6 - 2\sqrt{2}}}$

$f(x)$ is 2^e gr. vgl.
$g(x)$ " 1^e gr. vgl.







Snijp. van $f(x)$ en $g(x)$.

$f(x) = g(x)$

rood 2 opl. ← $D > 0$

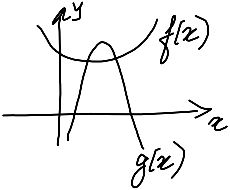
$\underline{x^2 + 2x - 7 = 5x + 3}$

$\underline{x^2 - 3x - 10 = 0}$ ← oplossings vgl.

$f(x)$ is 2e gr. vgl.

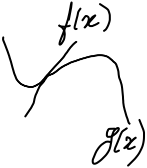
$g(x)$,, 2 gr. vgl

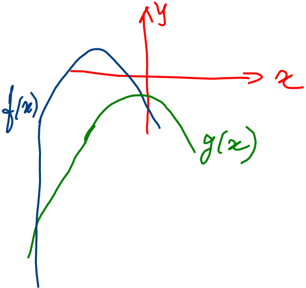
$f(x) = g(x)$



D oplossings vgl. > 0

D ,, $= 0$





$f(x) = g(x)$

$D > 0 \rightarrow 2$ sn.

16,13 a

(I) $y = a(x - x_t)^2 + y_t$

$T(0,0) \rightarrow y = a(x-0)^2 + 0$

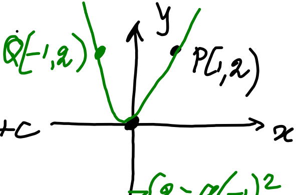
$P(1,2) \rightarrow$

$2 = a(1-0)^2 + 0$

$2 = a$

$y = 2(x-0)^2 + 0$

$\underline{y = 2x^2}$

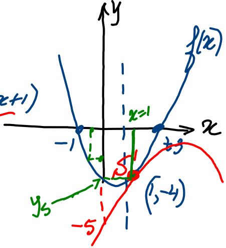


(II) $y = ax^2 + bx + c$

$Q(-1,2) \rightarrow$
$P(1,2) \rightarrow \quad y = ax^2 + bx + c$
$T(0,0) \rightarrow$

$$\begin{cases} 2 = a(-1)^2 - b \cdot + c \\ 2 = a \cdot 1^2 + b + c \\ 0 = a \cdot 0^2 + b \cdot 0 + c \end{cases}$$

16.18.e.



Geg $f(x) = x^2 - 2x - 3 \rightsquigarrow (x-3)(x+1)$

$g(x) = -x^2 + 2x - 5$ ~~(x+5~~

Vraag bepaal snijp. $f(x)$ en $g(x)$

Opl

$f(x) = g(x)$.

$x^2 - 2x - 3 = -x^2 + 2x - 5$

$2x^2 - 4x + 2 = 0 \quad | \times \frac{1}{2} |$

$x^2 - 2x + 1 = 0$

$(x-1)^2 = 0 \implies x - 1 = 0$

$x = 1$

Coördn Snijpunt $S(x, f(x))$

$S(1, \underbrace{1^2 - 2 \cdot 1 - 3}_{x^2 - 2x - 3 = f(x)})$

$\underline{\underline{S(1, -4)}}$

Controle $x = 1 \rightarrow g(x) \rightarrow -1^2 + 2 \cdot 1 - 5 = -4$

klopt

waarde tabel

x	y
1	. -
2	- . .
-1	- -