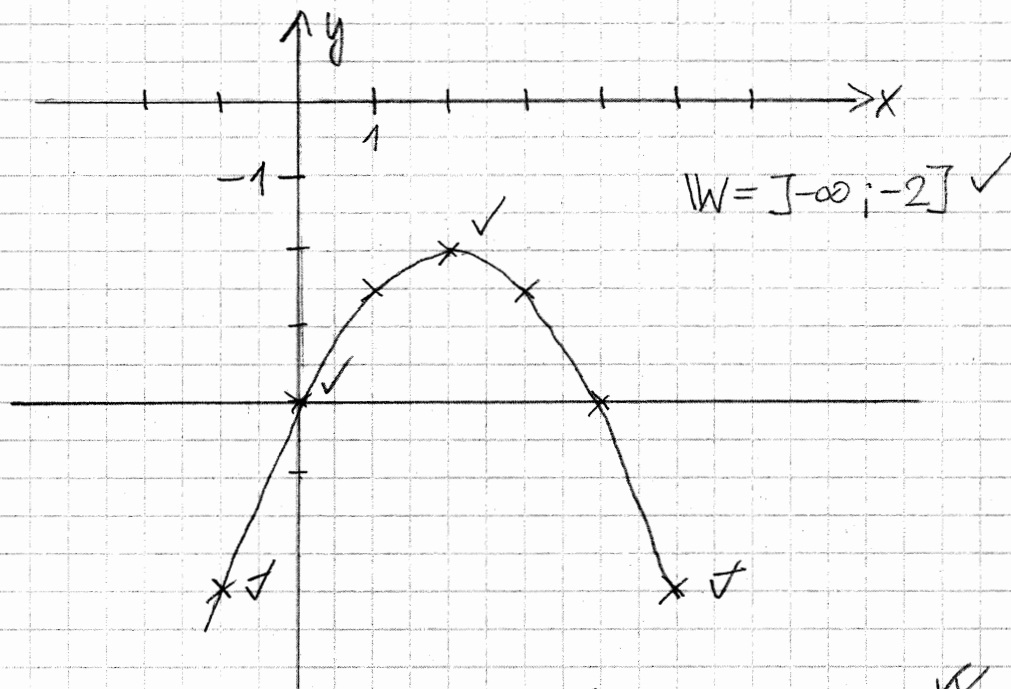


1.1 $p(x) = a(x-2)^2 - 2$ ✓ $a(0-2)^2 - 2 = -4$ ✓ $\Rightarrow a = -0,5$ ✓
 $p(x) = -0,5(x-2)^2 - 2$ ✓

$= -0,5(x^2 - 4x + 4) - 2 = -0,5x^2 + 2x - 4$

1.2 Parabel nach unten geöffnet und $y_s < 0$ ✓ $\Rightarrow$ Beh

1.3



1.4 $p(x) \geq -4$ für $x \in [0; 4]$ ✓ aus Graph ablesen ✓
 oder $-0,5x^2 + 2x - 4 = -4$ ✓ $x_1 = 0$ $x_2 = 4$ ✓

1.5 $q(x) = -\frac{1}{2}(x-2)^2 + 0,5$ ✓

1.7 $-0,5x^2 + 2x - 4 = -2x + k$ ✓

$-0,5x^2 + 4x - 4 - k = 0$ ✓

$x_{1/2} = \frac{-4 \pm \sqrt{16 - 4(-0,5)(-4-k)}}{-1}$ ✓ $D = 8 - 2k$ ✓

eine Lösung, falls $D = 0 \Leftrightarrow k = 4$ ✓

$x_{1/2} = \frac{-4}{-1} = 4$ ✓ $B(4|4)$ ✓

1.6 $-2x + k = 0 \Leftrightarrow x = \frac{k}{2}$ ✓ $\frac{k}{2} = 2 \Leftrightarrow k = 4$ ✓

$$2.1 \quad h(x)=0 \Leftrightarrow -0,125 x^3 (x^3 - 13x^2 + 55x - 75) = 0 \quad x_1=0$$

$$x_2=3$$

$$\begin{array}{r} (x^3 - 13x^2 + 55x - 75) : (x-3) = x^2 - 10x + 25 \\ -(x^3 - 3x^2) \\ \hline -10x^2 + 55x - 75 \\ -(-10x^2 + 30x) \\ \hline 25x - 75 \\ -(25x - 75) \\ \hline 0 \end{array}$$

$$(x-5)^2 = 0 \\ x_{3,4} = 5$$

$x_1=0$ einfach
 $x_2=3$ einfach
 $x_{3,4}=5$ doppelt

$$h(x) = -0,125 x (x-3) (x-5)^2$$

2.2

Skizze

$$i(x) = -0,125 x^3 (x-3) (x-5)^2$$

