Übungen quadratische Ungleichungen

Aufgaben:

(1) $\frac{1}{2} \cdot x^2 - \frac{1}{2} \cdot x - 3 > 0$

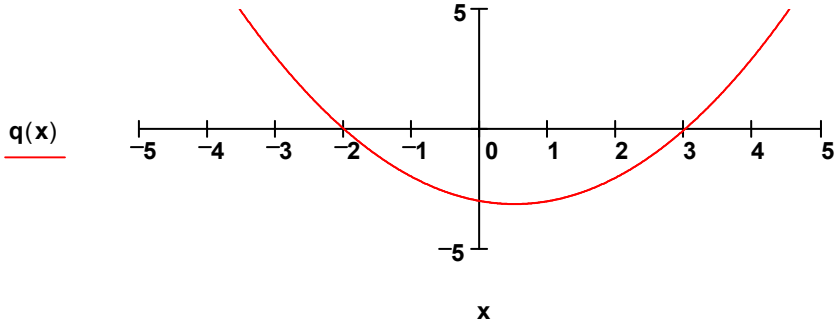
(2) $\frac{-1}{2} \cdot x^2 - x + 4 \leq 0$

(3) $\frac{2}{3} \cdot x^2 - \frac{4}{3} \cdot x - 2 \leq 0$

(4) $\frac{-3}{4} \cdot x^2 - \frac{21}{4} \cdot x - 9 \geq 0$

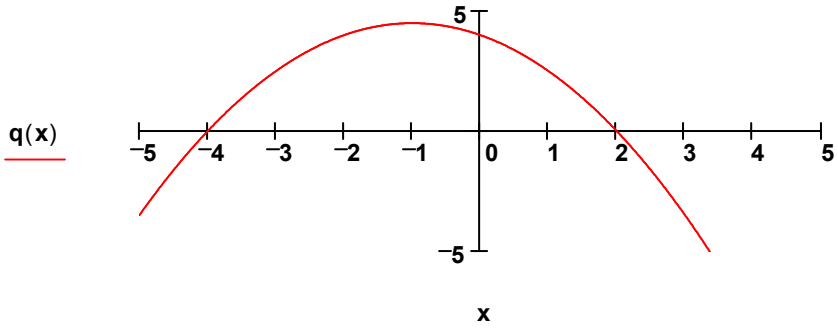
Lösungen:

(1) $\frac{1}{2}\cdot x^2-\frac{1}{2}\cdot x-3>0$ $\quad q(x):=\frac{1}{2}\cdot x^2-\frac{1}{2}\cdot x-3$ $\quad q(x)=0$ **auflösen**, $x\rightarrow\begin{pmatrix}-2\\3\end{pmatrix}$



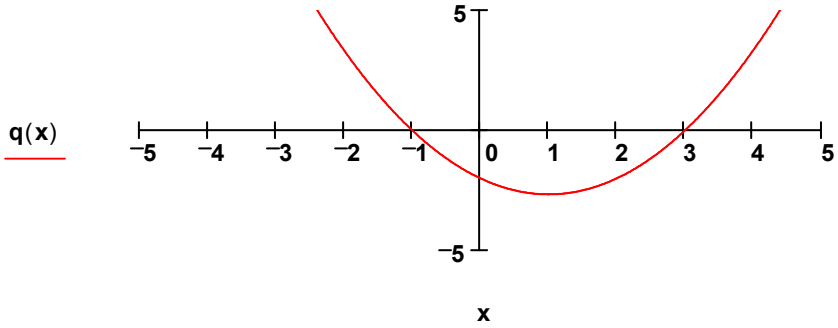
L =] - ∞ ; -2 [∪] 3 ; ∞ [

(2) $\frac{-1}{2}\cdot x^2-x+4\le 0$ $\quad q(x):=\frac{-1}{2}\cdot x^2-x+4$ $\quad q(x)=0$ **auflösen**, $x\rightarrow\begin{pmatrix}-4\\2\end{pmatrix}$



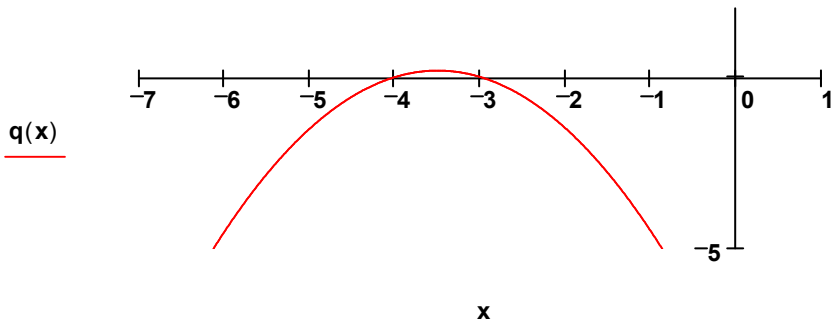
L =] - ∞ ; -4] ∪ [2 ; ∞ [

(3) $\frac{2}{3}\cdot x^2-\frac{4}{3}\cdot x-2\le 0$ $\quad q(x):=\frac{2}{3}\cdot x^2-\frac{4}{3}\cdot x-2$ $\quad q(x)=0$ **auflösen**, $x\rightarrow\begin{pmatrix}-1\\3\end{pmatrix}$



L = [-1 ; 3]

(4) $\frac{-3}{4}\cdot x^2-\frac{21}{4}\cdot x-9\ge 0$ $\quad q(x):=\frac{-3}{4}\cdot x^2-\frac{21}{4}\cdot x-9$ $\quad q(x)=0$ **auflösen**, $x\rightarrow\begin{pmatrix}-4\\-3\end{pmatrix}$



L = [-4 ; -3]