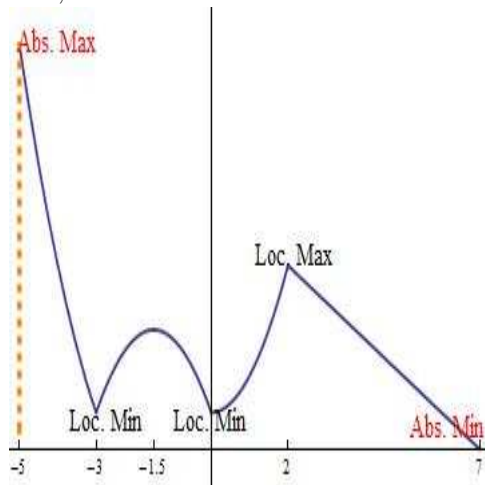**Example** In the graph below the function is defined on the interval $I = [-5, 7]$. And f has absolute maximum at $x = -5$ and a absolute minimum at $x = 7$. It has local maximum at $x = 2$ and local minimum at $x = -3, x = 0$.

Example In the graph below the function is defined on the interval $[0, 2]$. And f has an absolute maximum at $x = 2$ and and absolute minimum at $x = 0$. It has a local minimum at $x = 1$ and no local maximum.