

$$y = x^4 - 4x^3$$

 y $(0, 0)$ $(4, 0)$ x $(2, -16)$ $(3, -27)$ $f' < 0$, f decreasing $f' < 0$, f decreasing $f' > 0$, f increasing $f'' > 0$, f convex up $f'' < 0$, convex down $f'' > 0$, f convex up