

I – Functions with Absolute value and Radicals. Sketch the graph of each of the following functions : f_1 to f_6 in the same picture as f_0 .

$$f_0(x) = \sqrt{x} \quad ; \quad f_1(x) = \sqrt{-x} \quad ; \quad f_2(x) = -\sqrt{-x} \quad ; \quad f_3(x) = \sqrt{|x|}$$

$$f_4(x) = -\sqrt{3-x} + 2 \quad ; \quad f_5(x) = \sqrt{|x-3|} + 2 \quad ; \quad f_6(x) = \sqrt{4x-8} - 2$$



II – Study the symmetries of each of the following functions : find their axes or center of symmetry and verify by showing the appropriate calculations :

$$y=x^3-6x^2+12x-9$$

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

$$y=\frac{1}{8}(x^3+3x^2-13x-15)$$

$$y=\frac{x^2-2x-3}{x^2-2x-8}$$