1.) (5 pts. each) Differentiate each function using only the 5 rules given in class on Wednesday. Do NOT simplify answers.

a.) $y = x^7 + 4 \cdot x^{1/2}$

$\xrightarrow{D}$ $y' = 7x^6 + 4 \cdot \frac{1}{2} x^{-1/2}$

b.) $y = x(x-3) + \sqrt{5}$ $= x^2 - 3x + \sqrt{5}$

$\xrightarrow{D}$ $y' = 2x - 3 + 0$

c.) $f(x) = \dfrac{x^2 - 3x + 1}{x}$ $= \frac{x^2}{x} - \frac{3x}{x} + \frac{1}{x} = x - 3 + x^{-1}$

$\xrightarrow{D}$ $y' = 1 - 0 - x^{-2}$

2.) (15 pts.) Use the graph of f to sketch the graph of the derivative f'.