

Math 30 – Workshop #8

1. Sketch graphs of functions $f(x)$ for which:

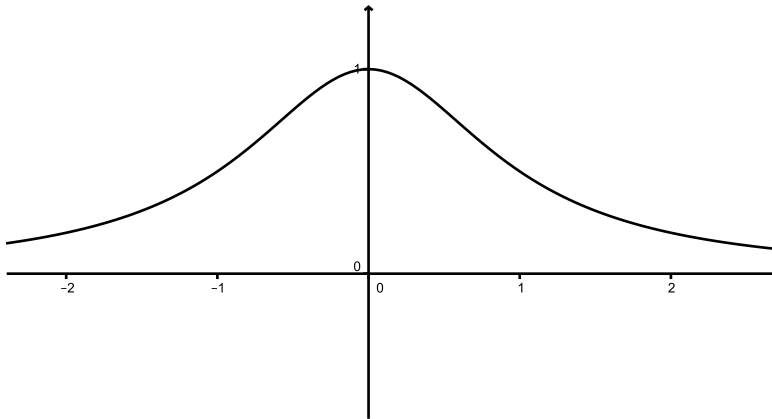
(a) $f'(x) > 0$ for all x .

(b) $f'(x) < 0$ for $-2 < x < 2$, and otherwise $f'(x) \geq 0$.

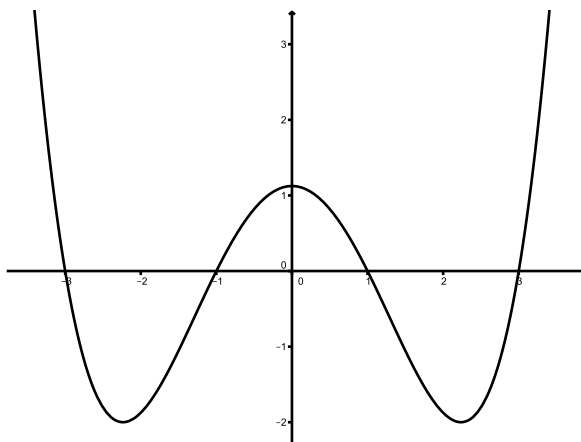
(c) $f'(x) = 1$ for all $x < 0$ and $f'(x) = -1$ for all $x > 0$.

2. For the functions whose graphs are shown below, carefully sketch graphs of the derivatives.

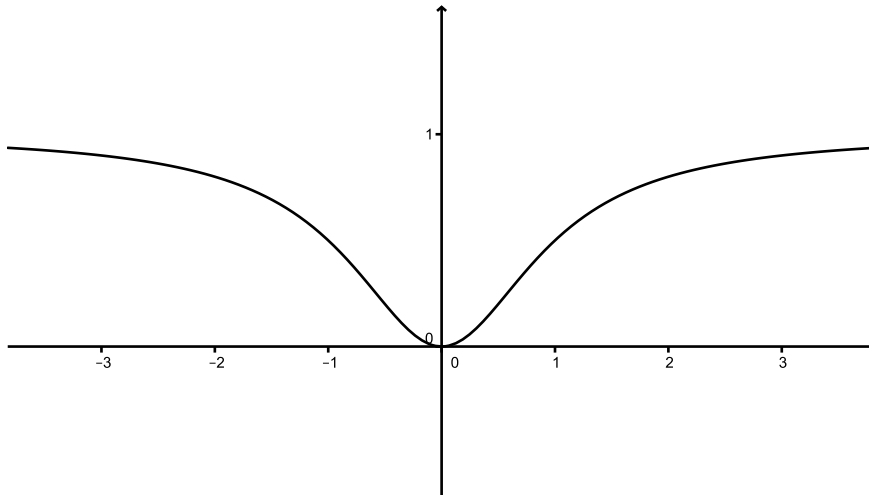
(a)



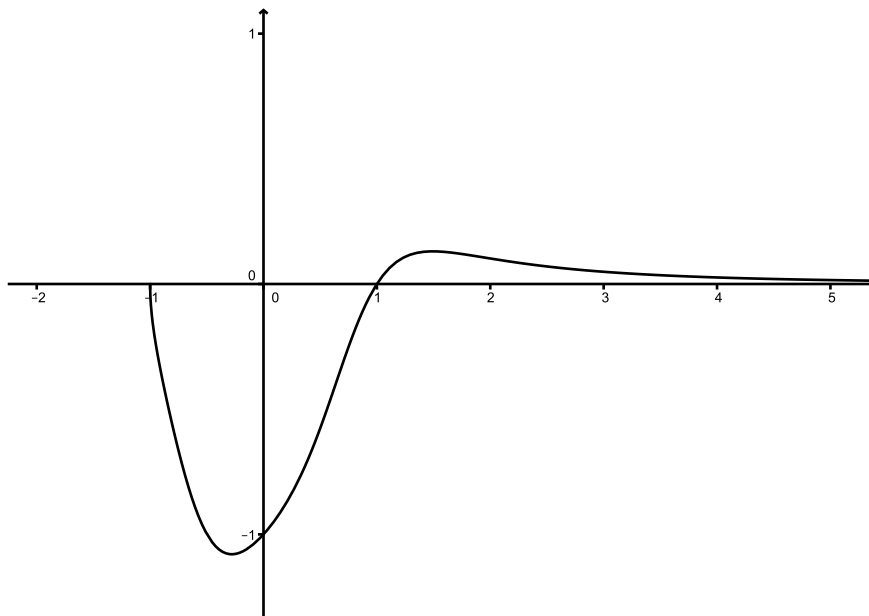
(b)



(c)



(d)



3. Find all points on the graph of $f(x) = x^3 - 3x^2 - 9x + 1$ where the tangent line is parallel to the tangent line at $x = 2$.