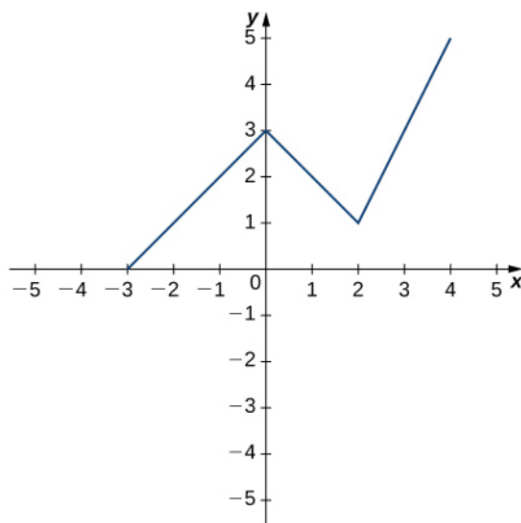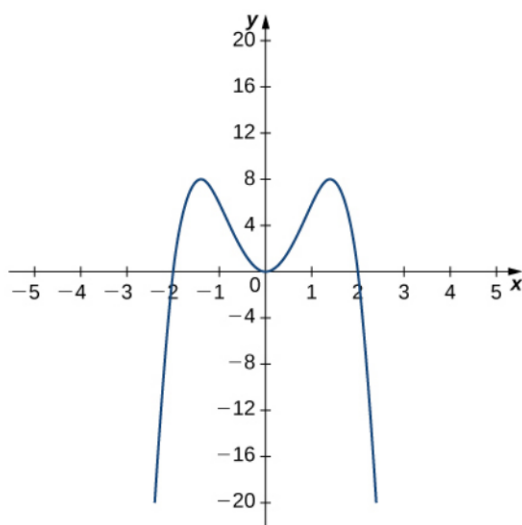---

IN-CLASS ACTIVITY : DERIVATIVES III

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1. Use the graph below representing the function $f(x)$, to evaluate $f'(-0.5)$, $f'(0)$, $f'(1)$, $f'(2)$ and $f'(3)$ (if they exist).
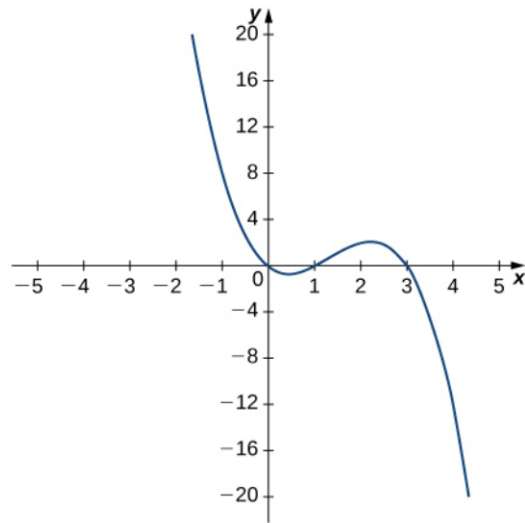

Can you write a formula for $f(x)$? And for its derivative?

2. Given the graph of the function $f(x)$ below, sketch the graph of its derivative.

3. Given the graph of the function $f(x)$ below, sketch the graph of its derivative.

4. Sketch the graph of a function $f(x)$ with all of the following properties :

i) $f'(x) > 0$ for $-2 \leq x < 1$;

ii) $f'(2) = 0$;

iii) $f'(x) > 0$ for $x > 2$;

iv) $f(2) = 2$ and $f(0) = 1$;

v) $\lim_{x \to -\infty} f(x) = 0$;

vi) $\lim_{x \to +\infty} = +\infty$;

vii) $f'(1)$ does not exist.