The Derivative Function

1. Let $f$ be the functions whose graph is given. Estimate the following values and then sketch the graph of $f'$ as we did in class with the first example.

- $f'(4)$
- $f'(3)$
- $f'(2)$
- $f'(1)$
- $f'(0)$
- $f'(-1)$
- $f'(-2)$
- $f'(-3)$
Recall that
\[ f'(x) = \lim_{h \to 0} \frac{f(x + h) - f(x)}{h}. \]

2. Find \( g'(x) \) if \( g(x) = x^3 + x \).

3. Find \( p'(x) \) if \( p(x) = \frac{1 - x}{2 + x} \)

Note: The above are Examples 2 & 4 from §2.8.