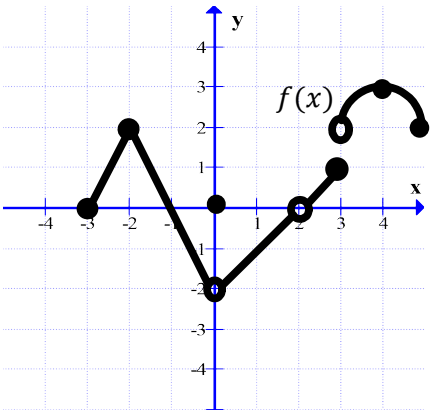
C12 - 2.1 - Derivatives Hmk

$$f(x) = \begin{cases} x^2, & x < 1 \\ 2x - 1, & x \geq 1 \end{cases} \qquad f'(1) =$$

Graph $f''(x) = x + 1, f'(x), and\ f(x)$ on three graphs working up the page.

Graph $f(x) = x^3 - 3x^2, f'(x), and\ f''(x)$ on three graphs working down the page.



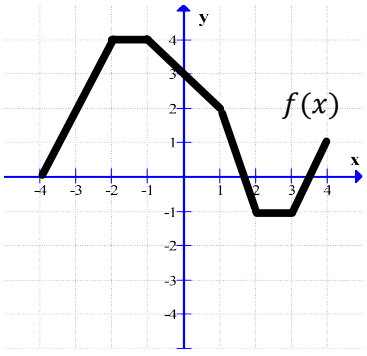
A function $f(x)$ consists of straight lines and a semi circles.

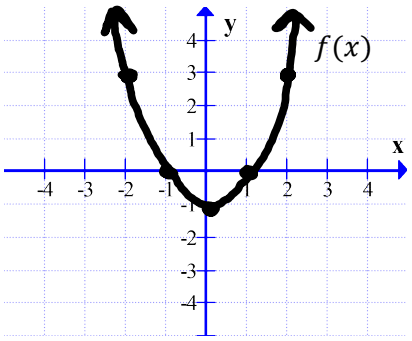
Find
$f'(-2) =$
$f'(-1) =$
$f'(3) =$
$f'(1) =$
$f'(4) =$

$$\lim_{x \to 1} \frac{f(x) - f(1)}{x - 1} =$$

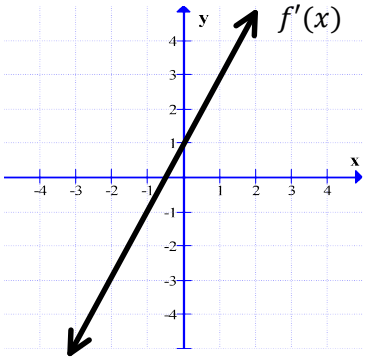
$$\lim_{h \to 0} \frac{f(h-1) - f(-1)}{h} =$$

Sketch $f'(x)$ from $f(x)$





Sketch f(x) from $f'(x)$



$f(0) = -4$