

Sketch a graph of the function with the following information:

$$f(4) = 0 \rightarrow \text{pt } (4, 0)$$

$$f'(x) > 0, x > 2$$

$$f'(x) < 0, x < 2$$

$$f''(x) > 0, x < -1$$

$$f''(x) < 0, x > -1$$

$$\lim_{x \rightarrow \infty} f(x) = 3$$

$$\lim_{x \rightarrow -\infty} f(x) = \infty$$

$$x \rightarrow -\infty$$

f' $\frac{-}{2} \frac{+}{}$ f inc on $(2, \infty)$
 f dec on $(-\infty, 2)$
 f'' $\frac{+}{-1} \frac{-}{}$ f concave up on $(-\infty, -1)$
 f concave down on $(-1, \infty)$
 \rightarrow H.A. @ $y = 3$
 \rightarrow end behavior is ∞ toward $x \rightarrow -\infty$

