

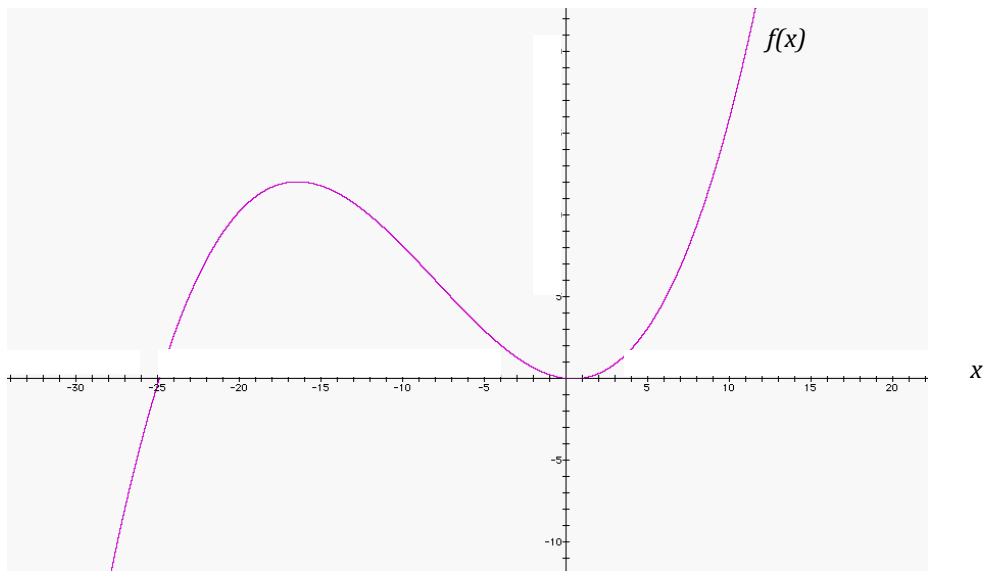
Checkup3E

Name: \_\_\_\_\_

- Explain the meaning of a derivative in context
- Explain the connections between a function and its higher-order derivatives

1. The height, in feet, of a rock thrown vertically upward from the surface of the Earth follows the position function  $s(t) = -16t^2 + 32t$  for time,  $t$ , in seconds. When is the velocity zero? Justify your reasoning.

2. On the same axis system, sketch a graph of  $f'(x)$  using the graph of  $f(x)$ .



3.

*Sketching f from f'* Sketch the graph of a continuous function  $f$  with  $f(0) = 5$  and

$$f'(x) = \begin{cases} -2, & x < 2 \\ -0.5, & x > 2. \end{cases}$$

