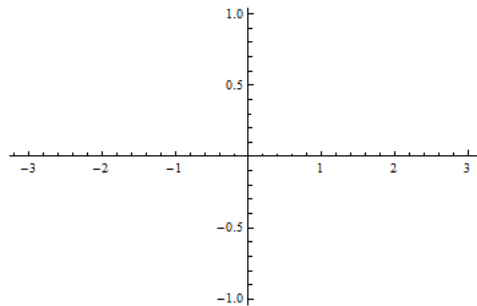
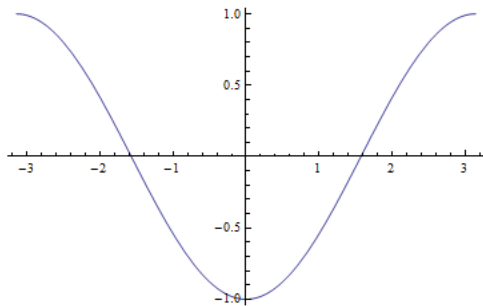
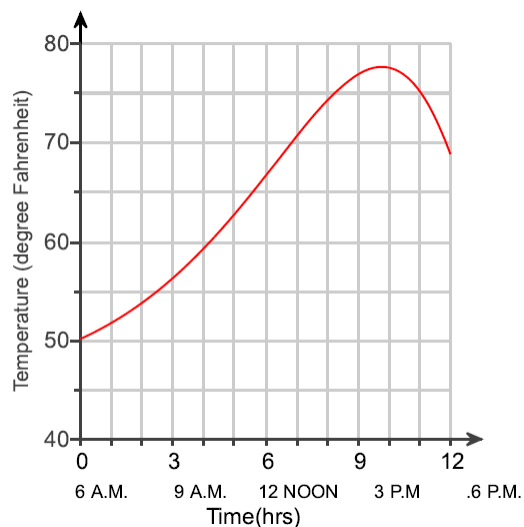


1. (8 pts) The graph of f is given on the left. Sketch the graph of f' on the right.



2. (6 pts) The graph below shows the temperature of a city between 6 A.M. and 6 P.M.

- (1) At what time does the temperature increase most rapidly?
- (2) At what time does the temperature decrease most rapidly?



3. Let $f(x) = x^2$.

- (1) (2 pts) Sketch the graphs of f .
- (2) (2 pts) Sketch the graphs of f' based on the graph of f .
- (3) (2 pts) Find $f'(2)$ by using the definition $f'(x_0) \stackrel{\text{def}}{=} \lim_{x \rightarrow x_0} \frac{f(x) - f(x_0)}{x - x_0}$.