1. Use the graph at the right to answer the following questions.

   a) On which intervals is $f$ increasing?

   b) On which intervals is $f$ decreasing?

   c) Sketch a graph of $f'$.

2. If $f'(x) = (x-2)(x+4)$, sketch a reasonable graph of $f$. 
3. Sketch the graph of a function $f$ for which $f(x) < 0$, $f'(x) > 0$, and $f''(x) < 0$ for all $x$.

4. To the right is a graph of $f''$, the second derivative of $f$. Based on this graph,
   
   a) where does $f$ have a point of inflection?

   b) where is $f$ concave down?