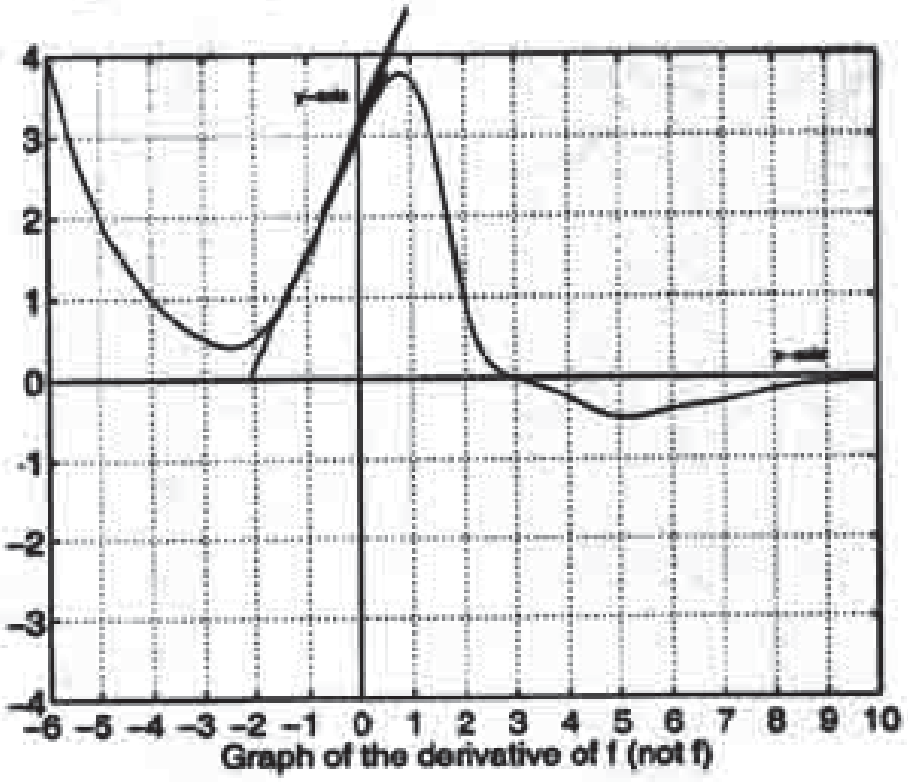
10. (10 points) The figure below gives the graph of the derivative f' of a function f



Graph of the derivative of f (not f)

(a) On what interval(s) is f increasing?

The function f is increasing for $x < 3$. [or $-6 < x < 3$]

(b) On what interval(s) is f concave down?

The function is concave down when f' is decreasing — i.e. for $x < -2.5$ and for $1 < x < 5$. [or $-6 < x < -2.5$ and $1 < x < 5$]

(c) For what value of x (approximately) is $f(x)$ the largest? Explain.

The function is increasing until $x = 3$ & then decreases. Thus, f has its largest value @ $x = 3$.

(d) For what value of x (approximately) is $f''(x)$ the largest? Explain.

The second derivative, f'' would be largest when the slope of f' (or a tangent to f') is largest in a positive direction. This appears to be around $x = -1$. (see graph)