AP[®] CALCULUS BC 2008

Question 5

The derivative of a function f is given by $f'(x) = (x-3)e^x$ for x > 0, and f(1) = 7.

- (a) The function f has a critical point at x = 3. At this point, does f have a relative minimum, a relative maximum, or neither? Justify your answer.
- (b) On what intervals, if any, is the graph of f both decreasing and concave up? Explain your reasoning.
- (c) Find the value of f(3).