Piecewise continuity problem

Do this free response question on a separate piece of paper and show clear work. Clearly label your answers. Remember: Don't ever use the word "it" and use notation whenever possible, such as f(x) or f'(x), rather than unclear words like "the function" or "the slope".

Let f be a function defined by $f(x) = \begin{cases} 1 - 2\sin x & \text{for } x \le 0 \\ e^{-4x} & \text{for } x > 0. \end{cases}$

(a) Show that f is continuous at $x = 0$.

(b) For $x \neq 0$, express $f'(x)$ as a piecewise-defined function. Find the value of x for which $f'(x) = -3$.