FTC Quiz

1. Evaluate the following integrals : (hint: two of these integrals you do not even need to use the Fundamental Theorem of Calculus)
   (a) $\int_{-5}^{5} \sin x \, dx$
   (b) $\int_{-2\pi}^{2\pi} \cos x \, dx$
   (c) $\int_{3}^{3} (e^{-2x^2} + \sec x) dx$
   (d) $\int_{-1}^{2} (1 + x^2) \, dx$
2. Using the Fundamental Theorem of Calculus find $f'(x)$ if

$$f(x) = \int_{\tan(x^2)}^{x^2+2x+1} \frac{2}{\sqrt{2-t^2}} \, dt.$$

   You do not need to simplify your answer.