Welcome Back!

Wednesday, January 21

1. Give an example of a function that is defined everywhere but has at least one discontinuity.

2. Give an example of a function that is everywhere continuous but not everywhere differentiable.

3. Differentiate the following functions:

   (a) $\sqrt{1+x^3}$

   (b) $\sin(x)/x$

   (c) $\arctan(x)$

4. Compute the following integrals:

   (a) $\int \sin(x)\,dx$

   (b) $\int 2xe^{x^2}\,dx$

   (c) $\int_0^5 e^{-x}\,dx$