NAME: .... ID. #: . . . .

Q1.If f is continuous at x_0, is it true that f must also be differentiable at x_0? Justify your answer.

Q2. Find equations for the horizontal tangents to the curve

$$y = x^3 - 3x - 2$$

Q3. Suppose u and v are functions of x that are differentiable at $x = 0$ and that $u(0) = 5, u'(0) = -3, v(0) = -1, v'(0) = 2$. Find $\frac{d}{dx}\left(\frac{v}{u}\right)$ at $x = 0$