KFUPM MATH101 Quiz#3 Sec. 2

a) Name Sr.

Q1 $If\ f(2) = 1, f'(2) = 2, g(2) = 3, g'(2) = 4\ then\ \frac{d}{dx}\left[\frac{xf(x)}{g(2)}\right]\Big|_{x=2} =$

Q2 $\lim_{x\to 0} \frac{sin(x)}{x+tan(x)} =$

Q3 Find the values of **a** and **b** *t*hat make f differentiable everywhere.

$$f(x) = \begin{cases} ax^2 + 2x & if \;\; x < 2 \\ x^3 - bx & if \;\; x \geq 2 \end{cases}$$