

Name:.....ID#:.....Sec:.....Ser:.....

Q.1: Find the limit $\lim_{(x,y) \rightarrow (0,0)} \frac{5xy^2}{3x^2 + 2y^4}$ if exist or show that limit does not exist.

Q.2: Find the linear approximation of the function $f(x, y) = \sqrt{20 - 7x^2 - y^2}$ at the point $(1, 2)$ and use it to approximate $f(1.08, 2.1)$.

Q.3: Find $\frac{\partial z}{\partial x}$ and $\frac{\partial x}{\partial y}$ for $2x - 3z = 4 \tan^{-1}(yz)$.