

King Fahd University of Petroleum & Minerals
Department of Mathematics & Statistics -**Math101-Term072-Quiz3-B**

Name:

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Q.1 If $f'(1) = 5, g'(1) = -3, f(1) = 6, g(1) = -4$, then find $\lim_{h \rightarrow 0} \left(\frac{\frac{f(1+h) - f(1)}{g(1+h) - g(1)}}{h} \right)$ if exists.

Q2. A particle moves on a vertical line so that its coordinate at time t is $S = t^3 - 12t + 3, t \geq 0$ where t in seconds, and S in meters, then

a. Find the distance moved when the velocity is 36 m / s

b. When is the particle moving upward and when it is moving downward?

Q3. Find the points on the curve $y = \frac{\cos(x)}{2 + \sin(x)}$ at which the tangent is horizontal.