KFUPM | Term 153 | Date: 2/8/2016

Mathematics & Statistics | MATH 101 | Duration: 20 minutes

Quiz# 3

Name: ID #: Section: 1 Serial #:

1. Use the definition of the derivative to find the point(s), if any, at which the function $f(x) = |9 - x^2|$ is not differentiable.

2. The curves $y = x^2 + ax + b$ and $y = cx - x^2$ have a common tangent at the point $(1, 0)$. Find a, b and c.

3. If the position function of a body moving in a straight line is given by the function $s(t) = 2t^3 - 15t^2 + 36t\ ,\ t \geq 0$, then when the body changes its direction?

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Mathematics & Statistics | MATH 101 | Duration: 15 minutes

Quiz# 3

Name: ID #: Section: 3 Serial #:

1. Evaluate the following limits, if exist

   a. $\lim_{x\to 1} \frac{x^4-2x^3-x+2}{x-1}$

   b. $\lim_{x\to 2} \frac{x^3-3x^2+4}{x-2}$

   c. $\lim_{x\to \frac{\pi}{4}} \frac{\tan x-1}{x-\frac{\pi}{4}}$

2. If $z = \sqrt[3]{u(u+1)}$ and $u = \frac{x}{x-1}$ then compute $\left.\frac{dz}{dx}\right|_{x=2}$.