KFUPM | Term 153 | Date: 28/8/2016

Mathematics & Statistics | MATH 101 | Duration: 15 minutes

Quiz# 6

Name: ID #: Section: 1 Serial #:

1. A rectangle has its base on the *x-axis* and its upper two vertices on the parabola $y = 12 - x^2$ what is the largest area the rectangle can have, and what are its dimensions?

2. Evaluate the following limits (if exist)

   a. $\lim_{x\to\infty} \left(\frac{x+2}{x-1}\right)^x$

   b. $\lim_{t\to 0} \frac{\sin 4t - 4t - t^2}{1-\cos 2t}$

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Quiz# 6

Name: ID #: Section: 3 Serial #:

1. Evaluate the following limits (if exist)

   a. $\lim_{x\to\infty} x^{\frac{1}{x}}$

   b. $\lim_{\theta\to 0} \frac{\frac{1}{2}^{\theta}-1}{2\theta}$

2. Newton's method is used to estimate the x-coordinate of the point where the curve of $y = x^3 + 2x$ crosses the horizontal line $y = 2$. Start with $x_0 = 1$ and calculate x_1.