KFUPM | Term 161 | Date: 1/1/2017

Mathematics & Statistics | MATH 101 | Duration: 20 minutes

Quiz# 6

Name: ID #: Section: 4 Serial #:

1. If a cone is inscribed in a larger cone with height 9 m and base radius 5 m so that its vertex is at the center of the base of the larger cone, then find the base radius of the inner cone with maximum volume.

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2. A particle moves in a straight line and has velocity given by $v(t) = \frac{1+2t^2}{1+t^2}$. If the initial displacement of the particle is $s(0) = \frac{\pi}{4}$, then find $s(1)$.

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3. 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.