NAME _____ JULY 12, 2018

Instructions: *Include all relevant work to get full credit.*

Quiz #10

1. Find the linear approximation of the function $f(x) = \sqrt[3]{1+x}$ at $a = 0$ and use it to approximate the value of $\sqrt[3]{0.95}$ [3]

2. Find the differential of $y = \theta^2 \sin 2\theta$. [2]

3. Find the differential dy if $y = e^{(5x)}$ and evaluate its value when $x = 0$ and $dx = 0.1$ [2]

4. The radius of a circular disk is given as 24 cm with a maximum error in measurement of 0.2 cm. Use differentials to estimate the maximum error in the calculated area of the disk. What is the relative error? [3]