

Quiz 6A - MTH 1410

Name: _____

1) (4 points) New postal regulations stipulate that for any box with a square base, the sum of the length and the height can be at most 7 feet. Use calculus to find the maximum volume for such a box. Round your answer to the nearest two decimal places. Make sure to confirm that your answer is a maximum.

2) (4 points) Find the following limit. If the limit does not exist, explain why.

$$\lim_{x \rightarrow \infty} 3x \tan\left(\frac{1}{x}\right)$$

3) (2 points) Approximate a solution to the equation $x^2 = 5x - 2$. Given $x_1 = 1$, use Newton's Method to find x_3 . Round your answer to the nearest two decimal places.