MTH 132 - Quiz 1
16 May 2014

Name: Solutions

Justify all your work to receive full credit. No notes, books, calculators, phones, or any electronic devices are allowed on this quiz. Good luck!

Problem 1. (6 points) Compute the limits:

(a) \( \lim_{x \to 2} \frac{x^2 - 4}{x - 2} = \lim_{x \to 2} \frac{(x - 2)(x + 2)}{x - 2} = 2 + 2 = 4 \)

(b) \( \lim_{t \to 0} \frac{\tan t}{t(t + 3)} = \lim_{t \to 0} \frac{\sin t}{t} \cdot \lim_{t \to 0} \frac{1}{(\cos t)(t + 3)} = \left( \lim_{t \to 0} \frac{\sin t}{t} \right) \left( \lim_{t \to 0} \frac{1}{(\cos t)(t + 3)} \right) = 1 \cdot \frac{1}{(\cos 0)(0 + 3)} = \frac{1}{3} \)

(c) \( \lim_{w \to 0^+} \frac{\sin \left( \frac{2\sqrt{w}}{w} \right)}{\sqrt{w}} = 2 \lim_{w \to 0^+} \frac{\sin \left( \frac{2\sqrt{w}}{\sqrt{w}} \right)}{\sqrt{w}} = 2 \cdot 1 = 2 \)