Fall 2018 MA 114 Quiz 4 Thursday, 14 February 2019

Name: _____ Section: _____

Answer all questions and show your work. Unsupported answers may receive *no credit*. You may not use a calculator on this quiz. Allow 15 minutes for the quiz.

1. (4 points) Let $a_n = \sin(n)/\sqrt{n}$. Does the sequence $\{a_n\}$ converge? If the sequence converges, find its limit. You must give a mathematical justification as, for example, by applying a theorem.

2. (6 points) For each of the following sequences, determine whether it converges, and if yes, find its limit:

   (a) (2 points) $a_n = \dfrac{e^n}{3^{n+1}}$

   (b) (2 points) $b_n = \dfrac{n^2+1}{(2n+1)^2}$

   (c) (2 points) $c_n = \dfrac{e^n}{n^2}$