

QUIZ #7

Math 142

Name: _____

SHOW ALL WORK. Any solution that is not accompanied by the appropriate work necessary for solving the problem will receive no credit. Do not use your calculator to evaluate any limits, derivatives, or integrals. If you need more space, you may use the back of the page.

1. Find $\lim_{n \rightarrow \infty} a_n$ for the following sequences.

(a) $a_n = \frac{2n}{\sqrt{n^2 + 1}}$

(b) $a_n = \sin\left(\frac{1}{n}\right)$

(c) $a_n = \frac{3^n}{4^n}$

2. Write an expression for the n^{th} term of the sequence $\left\{1 - \frac{1}{2}, 1 + \frac{3}{4}, 1 - \frac{7}{8}, 1 + \frac{15}{16}, 1 - \frac{31}{32}, \dots\right\}$.