

Homework Set 7

DUE: MARCH 18, 2019 (AT THE BEGINNING OF CLASS)

To be handed in*Please write your solution to Problem 1 on a single sheet of paper!*

1. Decide if the following sequences $(a_n)_{n \in \mathbb{N}}$ converge or diverge as $n \rightarrow +\infty$.
If they converge, compute the limit $\lim_{n \rightarrow +\infty} a_n$.

a) $a_n = \frac{\cos(n^2)}{n}$

b) $a_n = \frac{n^3 - 1}{n^3 + 1}$

c) $a_n = (-2)^n$

d) $a_n = \frac{(n+1)!}{n!}$

e) $a_n = e^{(1/n)}$

2. Textbook (5th edition) Section 9.1, Exercises 35-40, 45-52