

Math 173 – Quasi-Assignment #6

Do not hand in! Will not be marked!

1. Find all terms of the finite sequence $a_n = \frac{(-1)^n}{n!}, 1 \leq n \leq 4$.

2. State whether the following are arithmetic sequences, geometric sequences, or neither. Also, give a formula for the n th term of the sequence. Draw boxes around your answers. *Use a starting index of one.*

a) 15, 9, 3, -3, ...

b) $0, \frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{4}{5}, \dots$

c) 48, 12, 3, $\frac{3}{4}$, ...

3. Write the first three terms of the infinite sequence given by the recursion formula

$$\begin{cases} a_1 = 2 \\ a_n = (a_{n-1})^2 + 1 \end{cases} \quad \text{for } n \geq 2$$

4. Calculate the following sums, if possible.

a) $\sum_{j=0}^4 (3j)$

b) $2 + 4 + 6 + \dots + 88$

c) $\sum_{i=0}^{\infty} 300(0.99)^i$

d) $\frac{1}{25} - \frac{1}{20} + \frac{1}{16} - \frac{5}{64} + \dots$
