

Name _____

Homework 12
Sections 9.1 & 9.2

1. (2ea) For each of the sequences below, find a formula for the general term, a_n for $n \geq 1$. Answers should not be recursive definitions.

(a) $3, 6, 12, 24, 48, \dots$

(b) $\frac{1}{3}, \frac{2}{9}, \frac{1}{9}, \frac{4}{81}, \frac{5}{243}, \dots$

2. (2ea) Determine whether the sequence converges or diverges, and if it converges, find the limit.

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

(b) $b_n = 2^{-n+1} + 3$

3. (4) Compute the sum of the geometric series $150 + 15 + 1.5 + 0.15 + 0.015 + 0.0015 + \dots$

4. (4) Compute the sum $\sum_{n=1}^{21} (-2)^n$ (using an appropriate formula).

5. (4) Compute the exact sum of $243 - 162 + 108 - 72 + 48 - 32 + \cdots$