

Name _____

Homework 11
section 9.1

1. (4) Find the first four terms of the sequence whose n^{th} term is given by $(-1)^{n+1} \frac{3n}{n^2 + 4n + 7}$

2. (4) Find the first six terms of the recursively defined sequence $s_1 = 1, s_2 = 3$, and $s_n = s_{n-1} + 2s_{n-2}$ for $n > 2$.

3. (8) For each of the sequences below, find a formula for the general term, a_n . Answers should not be recursive definitions.

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

(c) $\frac{-1}{1}, \frac{3}{3}, \frac{-5}{9}, \frac{7}{27}, \frac{-9}{81}, \dots$

(b) $2, -2, 2, -2, 2, \dots$

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

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

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

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