

(C1-6.3) Name:

Homework Questions 3 – Recursive Formula

1. Find the next 3 terms of the following sequences given both the first term and the recursive formula.

a) $U_1 = 5 \quad U_{n+1} = 3U_n$

b) $U_1 = -3 \quad U_{n+1} = 2U_n$

c) $U_1 = 2 \quad U_{n+1} = 3U_n - 4$

d) $U_1 = 16 \quad U_{n+1} = \frac{U_n}{4}$

2. By writing down the first 4 terms or otherwise, find the recursive formula that defines the following sequence.

a) $U_n = 2n - 1$

b) $U_n = 3n - 2$

3. Find the next 4 terms of these recursively defined sequences

a) $U_{n+1} = U_n - U_{n-1}$ when $U_1 = 6$ and $U_2 = 2$

b) $U_{n+1} = 3U_n + 2U_{n-1}$ when $U_1 = 1$ and $U_2 = -3$

c) $U_{n+1} = 5U_n - 11$ when $U_1 = 3$

4. Write down the first 3 terms of the sequence defined by

$U_{n+1} = 12 - U_n$ when $U_1 = 10$