

# MATHEMATICS DEPARTMENT

Course: A3MAA

## Topic Title: Skills Test 2



Student Name: Answers

Date: \_\_\_\_\_ 2016

Special Instructions: No Calculators

Time Allowed: 5 mins

Marks: / 8

### Question 1

State a recursive formula for the following sequence.

0.5, 1, 2, 4, 8, 16, ...,

$$T_{n+1} = 2T_n, \quad T_1 = 0.5$$

### Question 2

Determine the first five terms for the following recursive formula

$$T_{n+1} = 3T_n, \quad T_1 = 4$$
$$\begin{aligned} T_2 &= 12 \\ T_3 &= 36 \\ T_4 &= 108 \\ T_5 &= 324 \end{aligned}$$

$\frac{1}{2}$  each

### Question 3

A sequence is defined by:

$$T_n = 2 \times 2^{n-1}$$

Find the

a)  $T_4 = 16$  ✓

b)  $T_7 = 128$  ✓

### Question 4

Determine the general form expression for the following geometric sequence:

3, 6, 12, 24, 48, ...,

$$\begin{aligned} a &= 3 \\ r &= 2 \end{aligned}$$

$$T_n = 3 \times 2^{n-1}$$