MATHEMATICS DEPARTMENT

Course: A3MAA

Topic Title: Skills Test 1

JOHN TONKIN COLLEGE

Student Name: Answers. Date: _____2016

Special Instructions: No Calculators Time Allowed: 20 mins

Marks: / ~~14~~ 14

Question 1

For the recursive equation $T_{n+1} = T_n + 7$ describe the sequence in words.

To find the next term, previous term
add 7 ✓✓

+2

Question 2

For the recursive equation $T_n = T_{n-1} - 3$ describe the sequence in words.

To find the next term, previous term
subtract 3 ✓✓

+2

Question 3

State a recursive formula for the following sequence.

32, 26, 20, 14, ...

$a = 32$
$d = -6$

$T_{n+1} = T_n - 6$, $T_1 = 32$.

✓ ✓

+2

Question 4

Determine the first five terms for the following recursive formula

$$T_{n+1} = T_n - 4, \quad T_1 = 55$$

$T_1 = 55$

$T_2 = 55 - 4$
$= 51$

$T_3 = 51 - 4$
$= 47$ ✓

$T_4 = 47 - 4$
$= 43$

$T_5 = 43 - 4$
$= 39.$

55, 51, 47, 43, 39 ✓

+2.

Question 5

A sequence is defined by:

$$T_n = 15 + 3n$$

Find the

a) T_4 $T_4 = 15 + 3(4)$ ✓
$= 27.$ ✓

+4

b) T_{25} $T_{25} = 15 + 3(25)$ ✓
$= 15 + 75$ ✓
$= 90$

Question 6

Determine the general form expression for the following arithmetic sequence:

12, 23, 34, 45, 56,....

$T_n = a + (n-1)d.$

$a = 12$
$d = 11.$

$T_n = 12 + (n-1)11$
$= 12 + 11n - 11.$ ✓✓

$T_n = 11n + 1$

+2