**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ CC Algebra**

**January 27, 2017**

**Recursive Sequences**

1) A geometric sequence is shown in the table below, where *an* represents the *n*th term of the sequence. What is the recursive formula for the geometric sequence?

a) *an* + 1 = *an*2

b) *an* + 1 = *an +* 3

c) *an* + 1 = 2*an*

d) *an* + 1 = 4*an*

2) Given the sequence: {5, 7, 9, 11, ...}

Which recursive formula generates this sequence?

a) *f* (1) = 5;    *f* (*n*) = *f* (*n* + 1) + 2

b)*f* (1) = 5;    *f* (*n*) = *f* (*n* - 1) + 4

c)*f* (1) = 5;    *f* (*n*) = *f* (*n* + 1) + 4

d) *f* (1) = 5;   *f* (*n*) = *f* (*n* - 1) + 2

3) Given *f*(1)= 8 and *f*(*n*)= *f*(*n* - 1) - 4, find *f*(4).

4) If *f*(1) = 3 and *f*(*n*) = -4*f*(*n* - 1) + 1, find *f*(3).

5) Given *a*1= 5 and *an*= *an-1* + 4, find the explicit formula.

6) If a sequence is defined recursively by

 *f*(0) = 2 and *f*(*n* + 1) = -2*f*(*n*) + 3 for *n* ≥ 0,

 then *f*(2) is equal to

 a) 1

 b) -11

 c) 5

 d) 17