

Recursive Formulas **Name:** _____

1. Find the first 5 terms determined by the following recursion formulas.

a) $a_1 = 3$
 $a_n = a_{n-1} + 2$

d) $a_1 = 1$
 $a_n = 2a_{n-1} + 4$

c) $a_1 = 3$
 $a_n = a_{n-1} - 2$

e) $a_1 = 0$
 $a_n = 3a_{n-1}$

d) $a_1 = 2$
 $a_n = a_{n-1} + 5$

f) $a_1 = -8$
 $a_n = (1/2)a_{n-1}$

2. Find a recursive formula for each of the following sequences.

a) 5, 6, 7, 8, ...

c) 1, -4, -9, -14, ...

b) 2, 8, 32, 128, 492, ...

d) 36, -24, 16, $\frac{-32}{3}$, $\frac{64}{9}$, ...

3. Given the explicit formula, write the recursive formula for the sequence.

a) $a_n = 3n - 1$

c) $a_n = -5n + 2$

b) $a_n = 4(2)^{n-1}$

d) $a_n = 8(1/2)^{n-1}$