

3.1 Recursive Formulas
Algebra 1

Name: _____

Period: _____

Match each Recursive Routine to the appropriate Recursive Formula.

1. 13
Ans + 5 , ,...

2. 12
Ans - 7 , ,...

3. 5
Ans + 13 , ,...

4. -7
Ans + 12 , ,...

5. Given each recursive formula, find the requested information.

a. $u_1 = -6$
 $u_n = u_{n-1} + 10$

Find the first 5 terms.
Find the 15th term.

b. $u_1 = 12$
 $u_n = u_{n-1} - 3.6$

Find the first 5 terms.
Find the 10th term.

c. $u_1 = 1.7$
 $u_n = u_{n-1} \cdot 2$

Find the first 5 terms.
Find the 17th term.

6. Given each sequence, write a recursive routine and recursive formula.

a. -23, -17, -11, -5, ...

b. 3.5, 7, 14, 28, ...

c. -16, -19.5, -23, -26.5, -30, ...

7. The table below gives the floor heights of a building.

Floor	0	1	2	3		10		21
Height (ft)	12	22.4	32.8		84.8		147.2	

a. Complete the table.

b. How many feet are between the floors?

c. Write a recursive formula that will give the height of the floors if you start on the 21st level and go down to the 0 floor.

8. Solve each equation. (You may use algebra or an undo table.)

a. $\frac{5+2(x-7)}{2} = 3.7$

b. $2\left(\frac{x}{5}-3\right)+8 = -4$

a. $u_1 = -7$
 $u_n = u_{n-1} + 12$

b. $u_1 = 5$
 $u_n = u_{n-1} + 13$

c. $u_1 = 13$
 $u_n = u_{n-1} - 5$

d. $u_1 = 12$
 $u_n = u_{n-1} - 7$

e. $u_1 = 13$
 $u_n = u_{n-1} + 5$

f. $u_1 = 5$
 $u_n = u_{n-1} \cdot 13$