

Determine the next term in each sequence and then write the NOW – NEXT, equation for each.

\* 1. 1, 3, 9, 27, 81, 243, ...  
 START @ 1 NEXT = NOW \* 3 } OUTPUT

2. 1, 5, 17, 53, ...  
 START @ 1 NEXT = NOW \* 3 + 2

3. 64, 16, 4, 1, ...  
 START @ 64 NEXT = NOW ÷ 4

Fill in the table below for the given INPUT – OUTPUT Rule.

4.

INPUT	OUTPUT
-1	5
0	2
2	-4
3	-7
5	-13

OUTPUT = -3\*INPUT + 2

5.

INPUT	OUTPUT
-3	12
5	-20
7	-28
12	-48
-10	40

OUTPUT = -4\*INPUT

Write the INPUT – OUTPUT rule and fill in the empty boxes.

6.

In	0	2	5	6
Out	5	9	15	17

OUTPUT = INPUT \* 2 + 5

\* 7.

In	-1	1	3	-3
Out	4			3

8.

In	-2	1	0	7
Out	-10	-1	-4	17

OUTPUT = 3\*INPUT - 4

For each of the following, write as a relation, list the domain, list the range, and indicate if it is a function.

9.

$x$	$y$
0	1
1	-1
2	-3
3	-5
4	-7

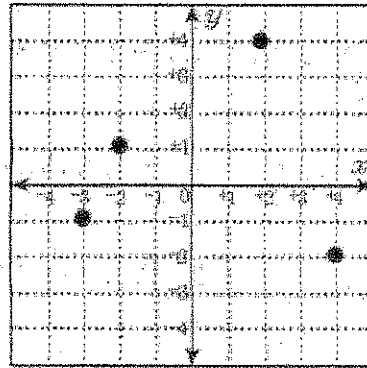
Relation  $(0, 1)(1, -1)(2, -3)(3, -5)(4, -7)$

Domain  $0, 1, 2, 3, 4$

Range  $1, -1, -3, -5, -7$

Function? **yes**

10.



Relation  $(-3, -1)(-2, 1)(2, 4)(4, -2)$

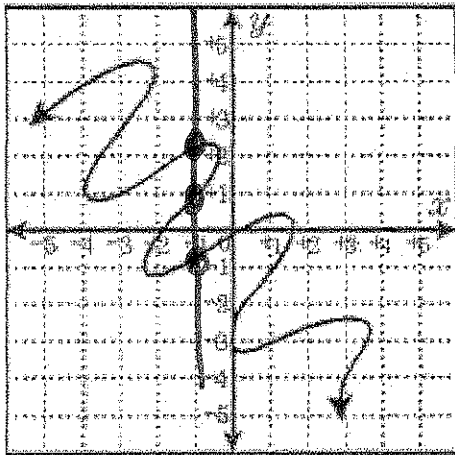
Domain  $-3, -2, 2, 4$

Range  $-1, 1, 4, -2$

Function? **yes**

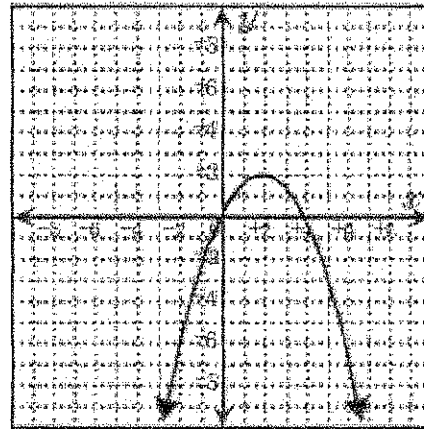
Determine if the following are functions. Explain why or why not?

11.



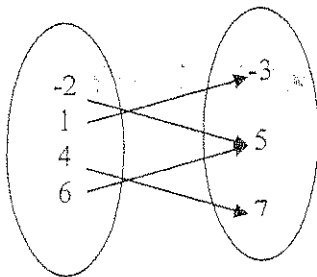
**NO,  
DOES NOT  
PASS  
VERTICAL  
LINE  
TEST**

12.



**YES**

13.



**YES, EACH  
INPUT GOES  
TO ONLY ONE  
OUTPUT**

14.

Input	Output
$x$	$y$
2	8
3	11
5	12
7	3
9	5
8	7
4	11

**YES, NO  
INPUTS  
REPEAT**