Name Key

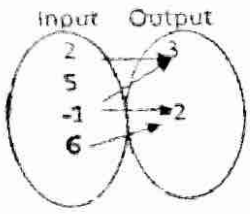
Date Period

Now it's your turn to try:

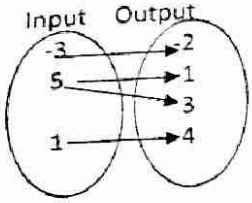
Worksheet

Tell whether the relation is a function. Explain your answer.

1.



Not a function. the input of -1 has two different outputs.



NOT a function The input of 5 has two different outputs.

3.

x	0	0	2	2	4	4
f(x)	-4	4	-3	3	-1	1

Not a function. several inputs have more than one output.

4.

x	-5	-4	-3	0	3	4	5
f(x)	-6	-4	-2	-1	-2	-4	-6

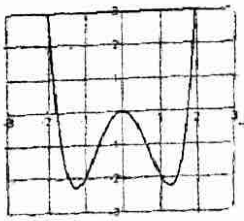
Function. each input has exactly one output.

5.

x	y
-2	4
3	3
2	4
1	3

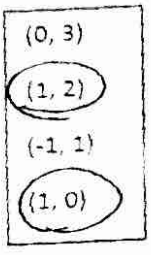
Function. each input has exactly one output.

6.



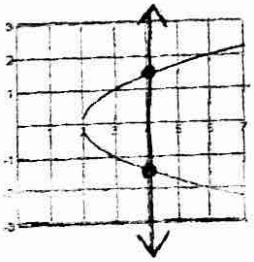
Function. The graph passes the vertical line test.

7.



Not a function. the input of 1 has two different outputs.

8.



Not a function does not pass the vertical line test.

How do you use function notation?

Function Notation: a form of substitution

If $f(x) = 2x - 3$, $g(x) = \sqrt{x + 5}$, $h(x) = x^2 - 3x + 5$,

Find each of the following:

① $f(-2) = 2(-2) - 3$
$= -4 - 3$
$= -7$
$f(-2) = -7$

② $g(7) = \sqrt{7+5}$
$= \sqrt{12}$
$g(7) = \sqrt{12}$

③ $h(-3) = (-3)^2 - 3(-3) + 5$
$= 9 + 9 + 5$
$= 23$
$h(-3) = 23$

④ $f(0) = 2(0) - 3$
$= 0 - 3$
$f(0) = -3$

⑤ $g(4) = \sqrt{4+5}$
$= \sqrt{9}$
$g(4) = 3$

⑥ $h(3) = (3)^2 - 3(3) + 5$
$= 9 - 9 + 5$
$h(3) = 5$

⑦ $f(6) = 2(6) - 3$
$= 12 - 3$
$f(6) = 9$

⑧ $g(-4) = \sqrt{-4+5}$
$g(-4) = \sqrt{1} = 1$

⑨ $h(0) = (0)^2 - 3(0) + 5$
$= 0 - 0 + 5$
$h(0) = 5$

⑩ $f(10) = 2(10) - 3$
$= 20 - 3$
$f(10) = 17$

⑪ $g(10) = \sqrt{10+5}$
$g(10) = \sqrt{15}$

⑫ $h(10) = (10)^2 - 3(10) + 5$
$= 100 - 30 + 5$
$= 70 + 5$
$h(10) = 75$