

# HOMESWORK: FUNCTIONS



NAME: \_\_\_\_\_

DAY 1

1. Determine whether the relations shown are functions. Explain your answer. Identify the domain and range.

| x | y  |
|---|----|
| 1 | 2  |
| 2 | 3  |
| 3 | 10 |
| 4 | 2  |

Domain  $\{1, 2, 3, 4\}$   
 Range  $\{2, 3, 10\}$   
 Function? Yes

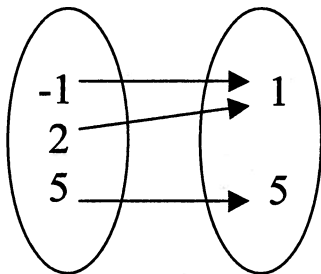
| x | y |
|---|---|
| 1 | 1 |
| 2 | 2 |
| 5 | 5 |
| 5 | 6 |

Domain  $\{1, 2, 5\}$   
 Range  $\{1, 2, 5, 6\}$   
 Function? No

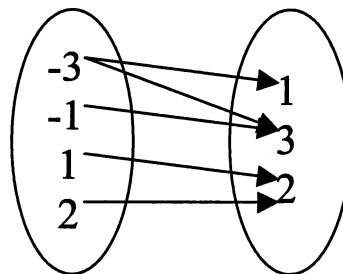
$5 \rightarrow 5$   
 $5 \rightarrow 6$

| x | y |
|---|---|
| 0 | 0 |
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |

Domain  $\{0, 1, 2, 3\}$   
 Range  $\{0, 1, 2, 3\}$   
 Function? Yes



Domain  $\{-1, 2, 5\}$   
 Range  $\{1, 5\}$   
 Function? Yes



Domain  $\{-3, -1, 1, 2\}$   
 Range  $\{1, 3, 2\}$   
 Function? No

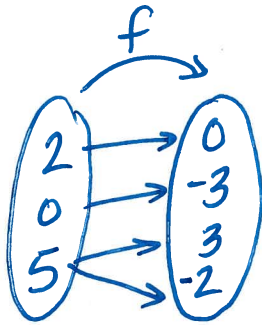
-3 corresponds to 1 and 3  
 -3 has more than one output

2. Consider this **function**:  $\{(1, 5), (2, 1), (4, 6)\}$ . Add a point so that the relation is no longer a function.  $(4, 7)$

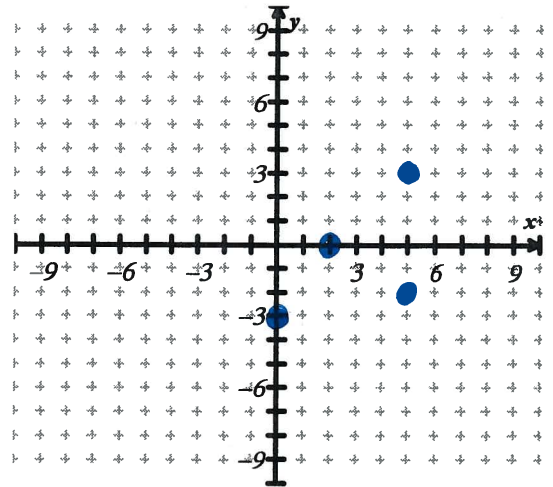
\* Many answers

3) For the relation:  $\{(2, 0), (0, -3), (5, 3), (5, -2)\}$

a) Create a mapping diagram for the relation.



b) Create a graph of the relation.

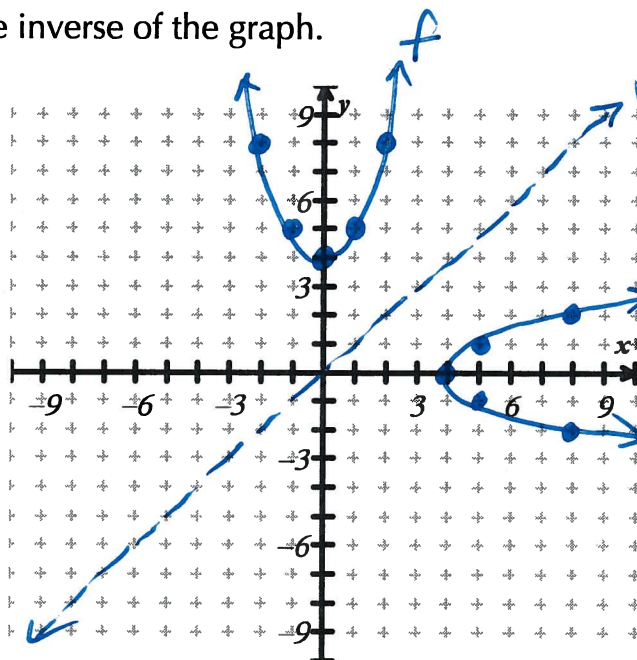


b) Is the relation a function? Why or why not?

No. A function requires that every input correspond to exactly one output.

In this relation, 5 corresponds to 3 and 2. Therefore, this is not a function!

4. Look at the graph. Is the inverse a function? Then sketch the inverse of the graph.



The inverse is not a function.