

**Autobiography Online Survey:**

[www.surveymonkey.com/r/CKRX8DB](http://www.surveymonkey.com/r/CKRX8DB)

**Class Website:**

[www.ghcimcf3m.weebly.com](http://www.ghcimcf3m.weebly.com)

Worksheet 1-1: Relations

A relation is an identified pattern, or relationship between two variables.

Relations can be represented in a variety of ways: equations, tables, graphs, and mapping diagrams.

A relation is a set of ordered pairs  $(x, y)$ .

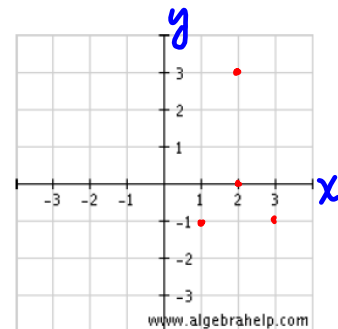
$y$  is the dependent variable because the value of  $y$  depends on the value of  $x$ .

$x$  is the independent variable because its value does not depend on the  $y$  variable.

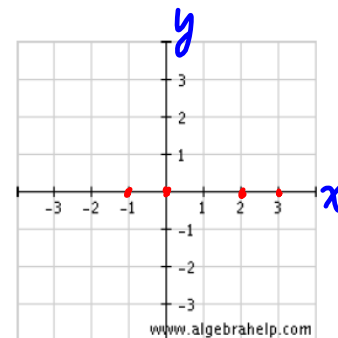
Label the axes!

Practice:

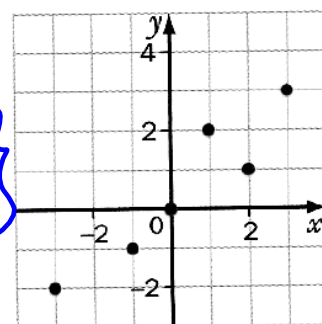
- Graph the relation:  $\{(2, 3), (1, -1), (3, -1), (2, 0)\}$ .



- Graph the relation:  $\{(-1, 0), (0, 0), (2, 0), (3, 0)\}$



- List the ordered pairs of the relation given by the graph.



$\{(-3, -2), (-1, -1), (0, 0), (1, 2), (2, 1), (3, 3)\}$



Curvy brackets for the set of ordered pairs

round brackets for each ordered pair

Get full mark if proper form is used!

4. List three ordered pairs of the relation  $y = 2x^2 - x$ . *Pick any x-value to substitute into equation*

$x$	$2x^2 - x = y$	$(x, y)$
0	$2(0)^2 - 0 = 0 - 0 = 0$	$(0, 0)$
1	$2(1)^2 - (1) = 2 - 1 = 1$	$(1, 1)$
2	$2(2)^2 - (2) = 8 - 2 = 6$	$(2, 6)$

The three ordered pairs are  $(0, 0), (1, 1), (2, 6)$ .

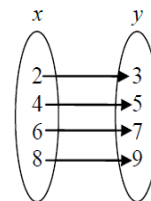
5. List three ordered pairs of the relation  $y = -x^2 + 2x + 10$

$x$	$-x^2 + 2x + 10 = y$	$(x, y)$
-1	$-(-1)^2 + 2(-1) + 10 = -1 - 2 + 10 = 7$	$(-1, 7)$
0	$-(0)^2 + 2(0) + 10 = 0 + 0 + 10 = 10$	$(0, 10)$
1	$-(1)^2 + 2(1) + 10 = -1 + 2 + 10 = 11$	$(1, 11)$

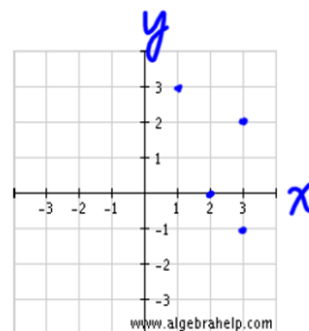
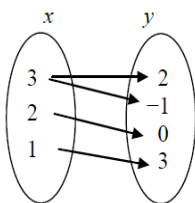
The three ordered pairs are  $(-1, 7), (0, 10), (1, 11)$ .

6. List the ordered pairs of the relation shown by the given mapping diagram.

$\{(2, 3), (4, 5), (6, 7), (8, 9)\}$  *Need curly brackets for the whole set of ordered pairs.*



7. Graph the relation shown by the given mapping diagram.



**Check answer key on worksheets**

**Do textbook exercises**