

1.6 Ordered Pairs & Relations

In mathematics, the location of any point on a grid can be indicated by an ORDERED PAIR of numbers.



The location of any point on the grid can be indicated by the ordered pair (x, y) , where x represents the number of horizontal units from 0 & y represents the number of vertical units from 0.

Use the grid at the

right to find the name

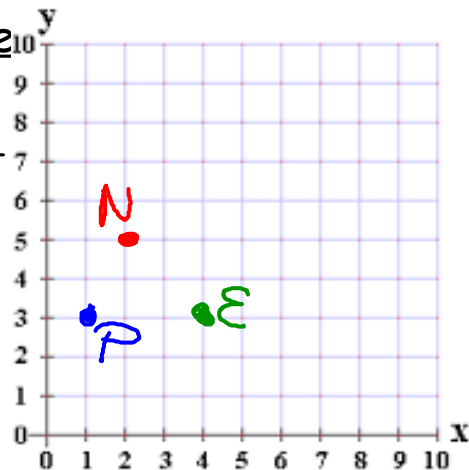
of the point for each

ordered pair:

a.) $N (2, 5)$

b.) $E (4, 3)$

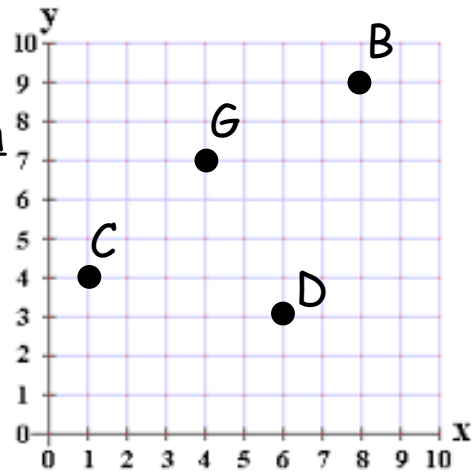
c.) $P (1, 3)$



Use the grid at the
right to find the
ordered pair for each
labeled point:



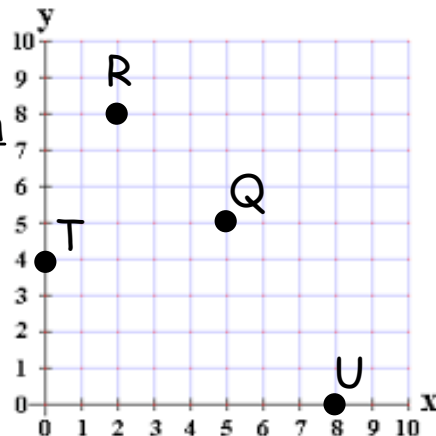
- a.) G $(4, 7)$
 b.) D $(6, 3)$
 c.) C $(1, 4)$
 d.) B $(8, 9)$



Use the grid at the
right to find the
ordered pair for each
labeled point:



- a.) R $(2, 8)$
 b.) Q $(5, 5)$
 c.) T $(0, 4)$
 d.) U $(8, 0)$



A set of ordered pairs such as $\{(0, 2), (1, 3), (2, 4), (3, 5)\}$ is a RELATION. A relation can also be shown in a table or a graph. The DOMAIN (or input) of the relation is the set of x-coordinates. The RANGE (or output) of the relation is the set of y-coordinates.



Mapping

Domain (Inputs) Range (Outputs)

Table

x	y
0	2
1	3
2	4
3	5

Graph

Ordered Pairs

$\{(0, 2), (1, 3), (2, 4), (3, 5)\}$

Example: Express the relation $\{(0, 2), (1, 4), (2, 5), (3, 8)\}$ as a table. Then determine the domain and range.



x	y
0	2
1	4
2	5
3	8

Domain: 0, 1, 2, 3

Range: 2, 4, 5, 8

Example: Express the relation $\{(2, 4), (0, 3), (1, 4), (1, 1)\}$ as a table. Then determine the domain and range.

x	y
2	4
0	3
1	4
1	1

Domain: 2, 0, 1

Range: 4, 3, 1



Example: John earns \$5 an hour doing yard work.

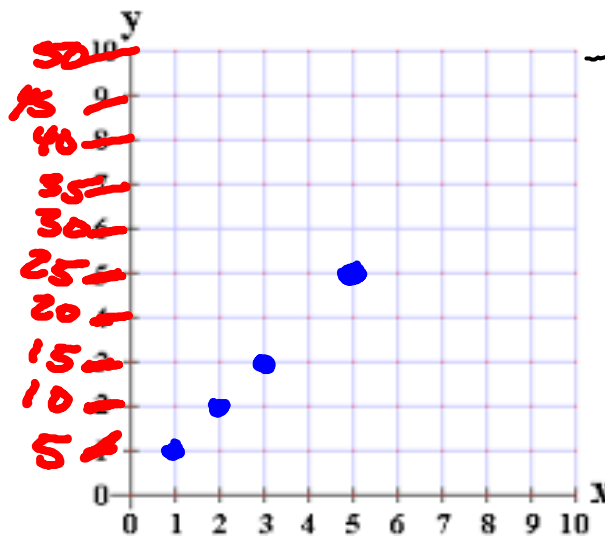
a.) Make a table of ordered pairs in which the x-coordinate represents the hours worked and the y-coordinate represents the amount of money John earns for 1, 2, 3, and 5 hours of work.

X	Y
1	5
2	10
3	15
5	25



Example: John earns \$5 an hour doing yard work.

b.) Graph the ordered pairs and describe the graph.



The more hours that John works, the more money he will get.

8.4 The Coordinate System.notebook