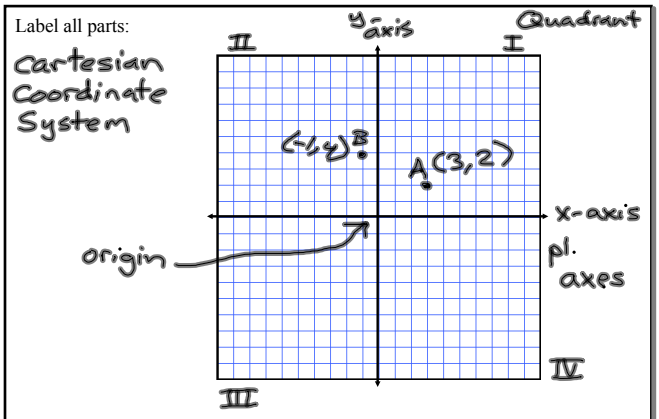
# Algebra I

1-7

Represent Functions as Graphs

Label all parts:




You can use a graph to represent a function.

1) In a given table, each corresponding pair of input and output values forms an ordered pair.
2) An ordered pair of numbers can be plotted as a point.
3) The $x$ - coordinate is the input ( mantissa ).
4) The $y$ - coordinate is the output ( ordinate ).
5) The horizontal axis ( x-axis ) of the graph is labeled with the independent variable
6) The vertical axis ( y-axis ) of the graph is labeled with the dependent variable

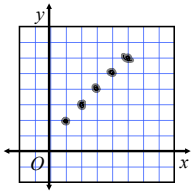
Examples:

1) Graph the function $y = x + 1$ with domain $D = \{1,2,3,4,5\}$.

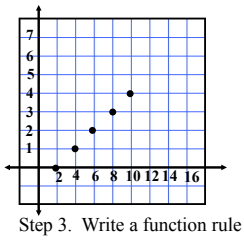
Step 1: Make an input/output table.

| $x$ | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| $y$ | 2 | 3 | 4 | 5 | 6 |

Step 2: Plot a point for each ordered pair ( $x$, $y$).



2) Write a function rule for the function represented by the graph.
Identify the domain and the range of the function.




Step 1: Make a table for the graph.

| $x$ | 2 | 4 | 6 | 8 | 10 |
|---|---|---|---|---|---|
| $y$ | 0 | 1 | 2 | 3 | 4 |

Step 2: Find a relationship between the input and the output values.

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Step 3. Write a function rule that describes the relationship.

$y =$ $\frac{x}{2} - 1$ or $\frac{1}{2}x - 1$

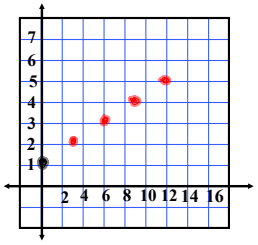
Domain $D =$ {2,4,6,8,10}

Range $R =$ {0,1,2,3,4}

Sample Problem

1) Graph the function $y = \frac{1}{3}x + 1$ with domain $D = \{0, 3, 6, 9, 12\}$

| $x$ | 0 | 3 | 6 | 9 | 12 |
|---|---|---|---|---|---|
| $y$ | 1 | 2 | 3 | 4 | 5 |




Assignment:

Pg. 46

1, 3 - 13 all,
15, 16, 19,
21, 22