

2-4 Relations & Functions

relation: a set of ordered pairs - $\{(0, 0), (1, 3), (2, 4.5)\}$

function: a relation with only one y-value for each x-value
** x can NOT repeat!!

Examples: Tell which are functions

1) $\{(0, 1), (1, 3), (2, 4), (5, 7)\}$

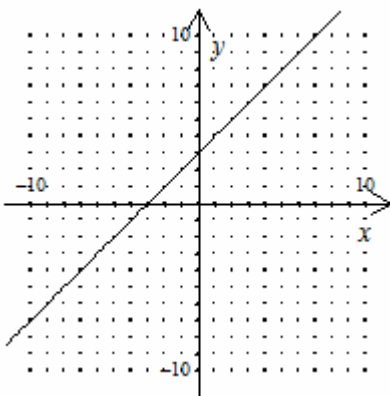
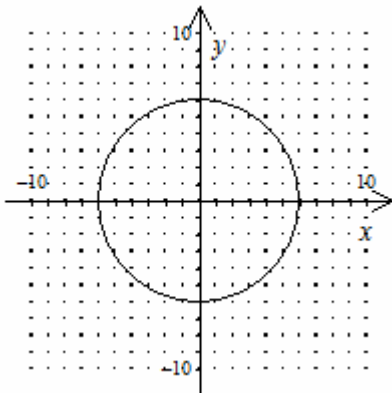
2) $\{(-1, 0), (0, 2), (-1, -2)\}$

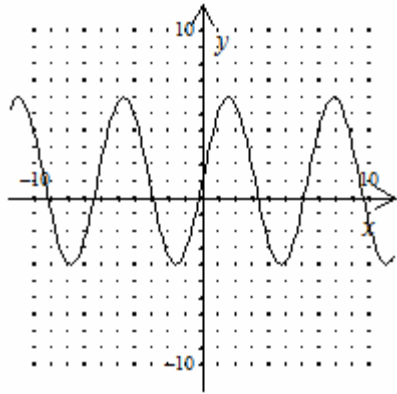
3) $\{1, 3, 5, 7, 8\}$

4)

x	2	4	6	8
Y	0	3	9	12

Vertical Line Test: If a vertical line passes through the graph more than once it is not a function.





Function Rule: An equation that describes the relationship between the input & output values of a function.

EX: $y = 3x + 4$
 ↑ ↑
 output input

EX: $f(x) = x - 2$ $f(x) =$ is just another way of saying $y =$

Evaluate a function rule: means substitute the input and find the output

EX: $y = 2x - 7$ for the input values $\{-4, 3, 5\}$

Domain: all possible x-values (input)
 what you can choose

Range: all possible y-values (output)

Examples: Name the domain & range

1) $\{(-2,4), (-1, 1), (0, 0), (1, 1), (2, 4)\}$

2)

x	Y
-4	12
-1	5
0	0
2	-3
3	0

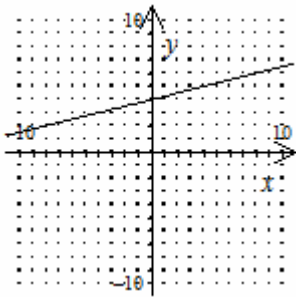
- 3) Find the range of $y = x^2 - 5$ if the domain is $\{2, 4, 6\}$
**Hint: substitute the input to find the output

Domain & Range of a Graph:

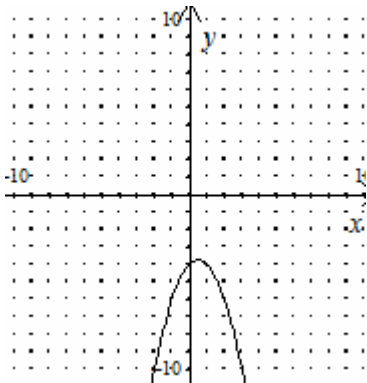
Domain: look at all x-values

Range: look at all y-values

1)



2)



3)

