**2.1 Relations and Function Notes**

**Relation** – a set of ordered pairs: for example {(4, 6), (-2, 100) (-7, -10)}

**Function** – a relation where there is exactly one y value for every x value (one output for every input)

**Domain** – the set of x values (input)

**Range** – the set of y values (output)

Functions come in many forms:

|  |  |
| --- | --- |
| x | y |
| 1 | 3 |
| -3 | 4 |
| -1 | -6 |

**Table** **Ordered pairs**  **Graph**

 {(4, 6), (-2, 100) (-7, -10)}

To determine if a relation is a function when represented as (a)…

table: If the x values DO NOT REPEAT, the relation **is** a function

ordered pairs: If the x values DO NOT REPEAT, the relation **is** a function

graph: VERTICAL LINE TEST – a vertical line through the graph may cross it only once

 YES, a function YES, a function NO!!!, not a function

**Standard Notation** $y=2x-7$

**Function Notation** $f\left(x\right)=2x-7$ Say this ‘f of x equals 2x - 7’

to find a function value ‘f of **5**’ written $f\left(5\right)=2\left(5\right)-7$ Put 5 in for all the x’s

 = 10 – 7 Simplify

 = 3

You are responsible for this information. If you need to practice this you may work the following problems. This is optional and will not be checked for a homework grade. page 59 #5-11 odd (find domain and range only, do not map), 13-29 odd, 38, 39, 43-45