UNIT 1 SUMMARY NOTE TEMPLATE

Set of Ordered Pairs

Example of Non-Function:

Example of Function:

Mapping Diagram

Example of Non-Function:

Example of Function:

Formal

Intuitive

Equation

Example of Non-Function:

Example of Function:

Relations

What is the mathematical relationship between two variables?

Graph

Example of Non-Function:

Example of Function:

A Function is a Special Kind of Relation

Functions

Definition:

Example

As Simple Machines

Domain and Range Examples

Function Notation

One-to-One
or
Many-to-One

e.g. f(x)=3x-7
Then f(2)=_____,
which means that the
point (,   ) lies on f.

e.g. f(x)=x^2

If f(b)=16 then b= _____

or b= _____ .

What a **One-to-One** Function
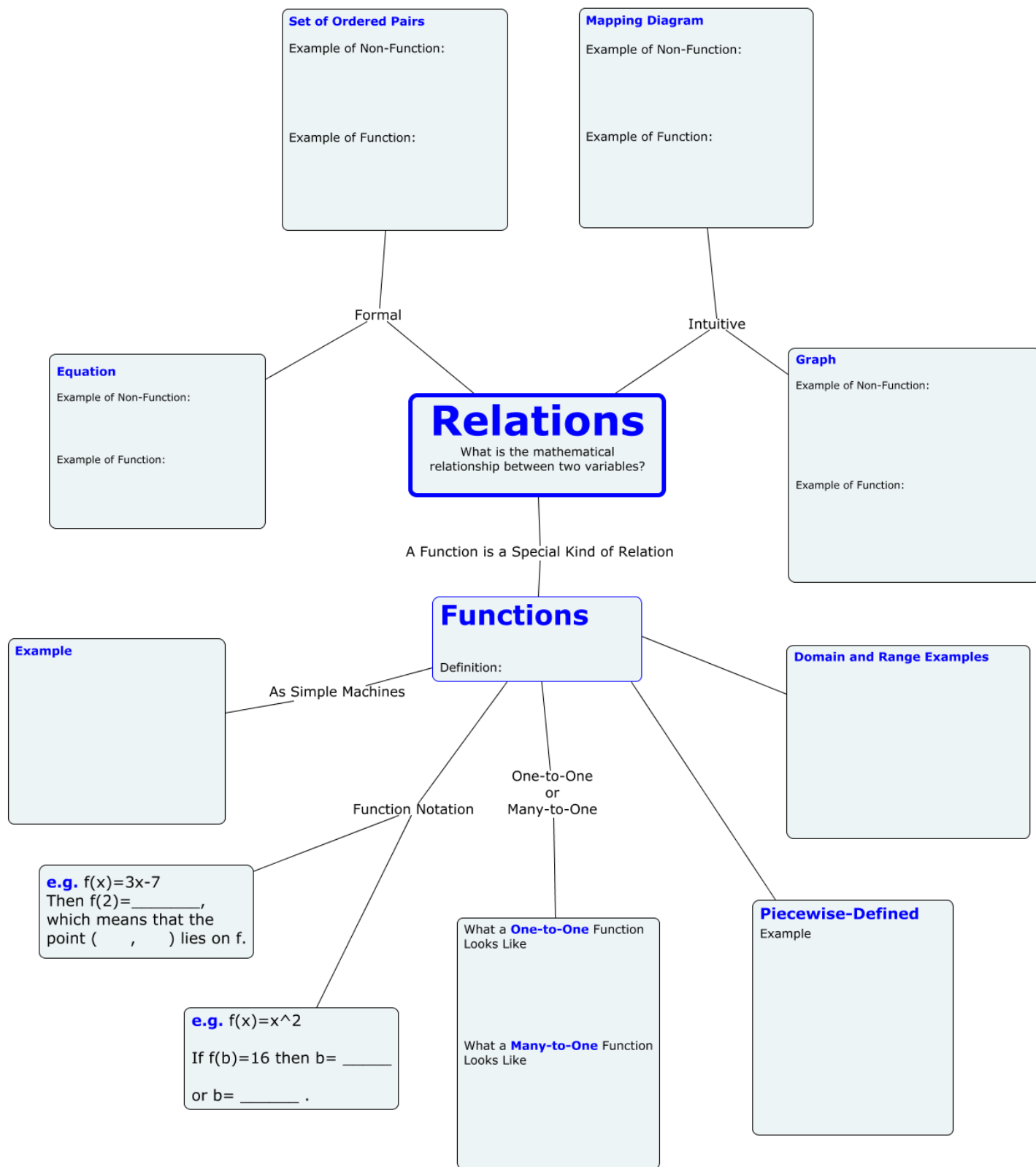Looks Like

What a **Many-to-One** Function
Looks Like

Piecewise-Defined

Example

Transformations of Functions

Given a "base" function f,
and real numbers a, b, h, k,
define a new function g such that

$$g(x) = af(b(x-h)) + k$$

How to Obtain the Graph of g given the Graph of f

In Words

Horizontal
1.
2.

Vertical
1.
2.

Using Mapping Notation

$$(x, y) \rightarrow (\qquad , \qquad)$$

Example

$$f(x) = |x^3|$$

$$g(x) = -3f(2(x+6)) - 5$$

How to Obtain the Graph of g given the Graph of f

In Words

Horizontal
1.
2.

Vertical
1.
2.

Using Mapping Notation

$$(x, y) \rightarrow (\qquad , \qquad)$$

Important Instructions

Complete this summary of Unit 1 by creating concept maps for each of the following:

1. Inverses of Functions
2. How Transformations of Functions Can Help You Avoid Making Dumb, Invalid Assumptions
3. How to Demonstrate that a Statement is True or False (Proof or Counterexample Respectively)