2. What is the Domain of a Relation?

Domain: All the different x values in numerical order.

   Listed in order without repeating!

3. What is the Range of a Relation?

Range: All the different y values in numerical order.

   Listed in order without repeating!

Other names for Domain and Range

Domain
- x-coordinates
- Input
- Independent

   Variable

Range
- y-coordinates
- Output
- Dependent

   Variable

$(4,-1),(2,3),(4,-5),(-2,6),(1,3)$

4. State the Domain and Range of this Relation:

Domain:

-2
2
4

Range:

-5
-1
3
6

State the domain and range of this relation.
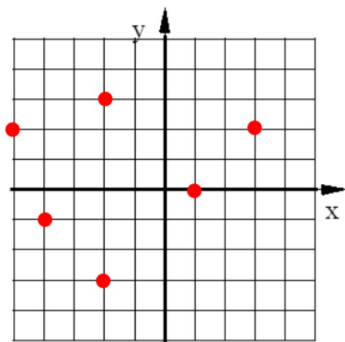
$(6,-1),(2,-5),(-1,7),(9,-4),(1,3)$

Domain:

-1, 1, 2, 6, 9,

Range

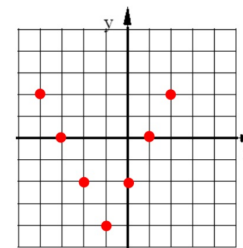-5, -4, -1, 3, 7
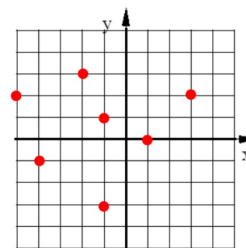
State the Domain and Range or each Relation

Range:
−3, −1, 0, 2, 3

(3, 2)
(1, 0)
(−2, 3)
(−2, −3)
(−4, −1)
(−5, 1)

Domain: −5, −4, −3, 1, 3

These are called Discrete Graphs.

The domain and range can just be listed using all the values of x and y.
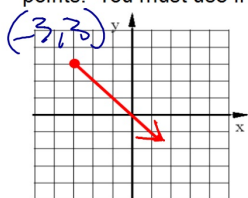
Discrete Quantity
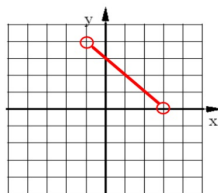a quantity that can be counted

---

These are called Continuous Graphs.

The domain and range can't be listed using all the values of x and y because there are an infinite # of points. You must use INEQUALITIES

(−3, 3)

Continuous Quantity
Quantity that can't be counted, it has to be measured.
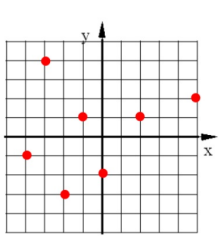
Domain: $x \geq -3$
Range: $y \leq 3$

Domain: $-1 < x < 3$
Range: $0 < y < 4$

---

6. What is a Function?

Panel 1

Some Relations are called Functions.

Every x value is paired with one and only one y value.
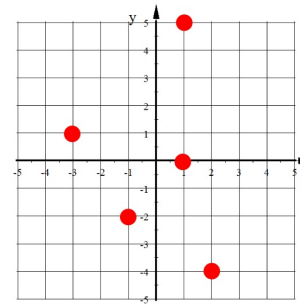
For every input there is only one output

x	y
-4	-1
-3	4
-2	-3
-1	1
0	-2
2	1
5	2

Is this relation a function?

Yes

No x-value repeats

Panel 2

Is this relation a function?

x	y
-3	1
-1	-2
1	0
1	5
2	-4

NOT A FUNCTION

The x-value of 1 produces two different y-values

Panel 3

Is this relation a function?

(6,7)   (-4,3)   (1, -5)   (6,2)

NOT A FUNCTION

The x-value of 6 produces two different y-values

Panel 4

Is this relation a function?

(4,0)   (2,1)   (-8,1)   (9,5)
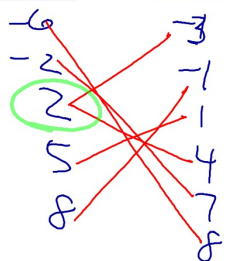
all different
x-values
Yes it's a function

Using a Mapping Diagram to tell if a
relation is a function.

(5,1), (2, 7), (2, -3), (8, -1), (2, 4), (6, 8)

Domain: Range:

-6   -3
-2   -1
2   1
5   4
8   7
          8

If any domain value
has more than one line
coming from it then the
relation is NOT a function

NOT
a function

If two lines come from the same x-value then
the relation is not a function because this means
that one x-value produces more than one y-value.

Is the following relation a function?

(-4, 7), (3, -9), (-8, 2), (5, 7), (2, 4)

Yes

No two x-values repeat. It doesn't matter if y-values repeat.

Is the following relation a function?

x	y
8	4
1	-9
-3	2
5	4

Yes

No two x-values repeat. It doesn't matter if y-values repeat.

Is the following relation a function?

x	y
-9	1
4	0
-2	-7
4	8

NO

When x is 4 there are two different values for y.