

5.2: Properties of Functions

Function - a special kind of relation where each input value (x-value, domain) is associated with exactly one output value (y-value, range-value)

Domain - the set of all input values of a relation (left column of a table, arrow diagram, first element in a ~~set of~~ ordered pairs)

Range - the set of all output values of a relation (right column of a table, arrow diagram, second element in an ordered pair)

Ex 1:

vehicle	# of wheels
car	4
motorcycle	2
tricycle	3
unicycle	1
bicycle	2

domain (bracketed on the left side of the table)

range (bracketed on the right side of the table)

a) Is this relation a function?

Yes \rightarrow each vehicle only has one # of wheels associated with it

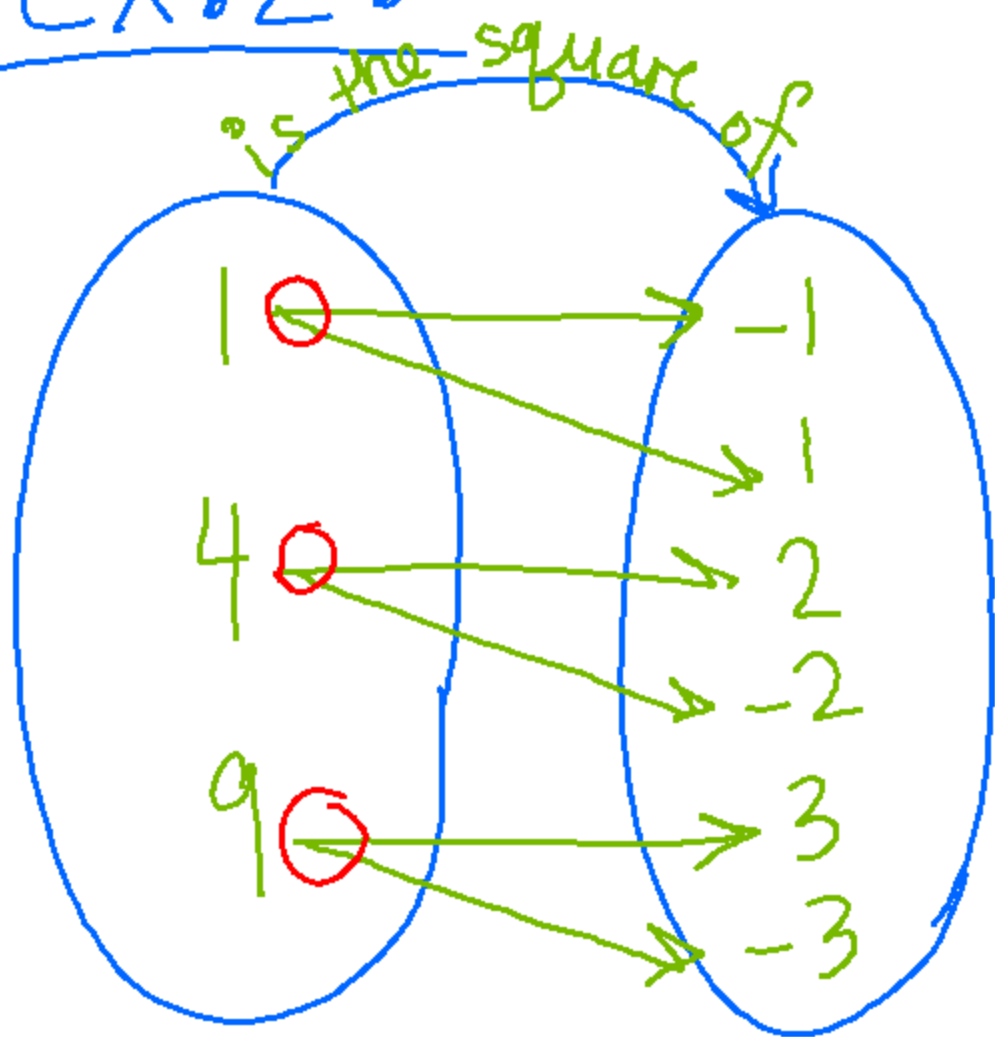
b) Identify the domain and range

$D: \{ \text{car, motorcycle, tricycle, unicycle, bicycle} \}$

$R: \{ 1, 2, 3, 4 \}$

* in order from least to greatest
* don't write repeats

Ex. 2:



a) Is this relation a function?

No this is not a function.
Each domain value connects
to two range values

b) Identify the domain and
range:

$$D = \{1, 4, 9\}$$

$$\text{Range} = \{-3, -2, -1, 1, 2, 3\}$$

Ex. 3:

$$\left\{ \overset{D}{(5, 3)}, \overset{R}{(7, 2)}, \overset{D}{(9, 5)}, \overset{R}{(11, 0)}, \overset{D}{(13, 5)} \right\}$$

a) Is this relation a function?

Yes. Each domain value connects to only 1 range value (no repeated domain values)

b) State the domain and range:

$$D = \{5, 7, 9, 11, 13\}$$

$$R = \{0, 2, 3, 5\}$$

HW: p. 270-272

4, 5, 8-10, 12, (13)