

October 12, 2016

- **Relation:** collection of ordered pairs
 $B = \{(-2, 2), (0, 1), (-5, 4)\}$
- **Domain of a Relation**
 objects \leftarrow Is the set of 1st elements of the collection of ordered pairs.
 $D: \{-2, 0, -5\}$
- **Range:** the set of 2nd elements of the collection of ordered pairs.
 $A: \{2, 1, 4\}$

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- **Function:** a relation is a function if and only if (iff) each object in the Domain is paired with exactly one object in the Range.

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Function Machine

Inputs \rightarrow **Rule** \rightarrow **Outputs**

- x 's
- 1st elements or objects
- Domain
- Horizontal Coord.
- Independent Variable

Rule

- y 's or $f(x)$'s
- 2nd elements or objects
- Range
- Vertical Coord.
- Dependent Variable

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Input	Rule:	Output
-7	$3x - 2$	-23
5		13
13		37
$-\frac{7}{5}$		$-\frac{31}{5}$
$\sqrt{2}$		$3(\sqrt{2}) - 2$
π		$3\pi - 2$

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