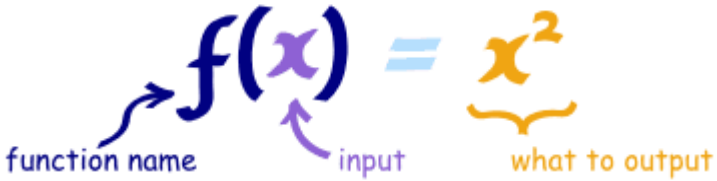
What is a Function?

A function relates an input to an output.



You would say *"f of x equals x squared"*

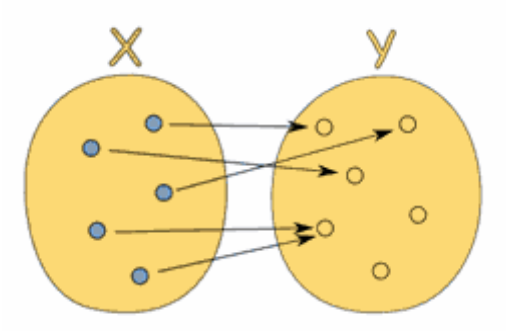
Example: with $\mathbf{f(x) = x^2}$:

- an input of 4
- becomes an output of 16.

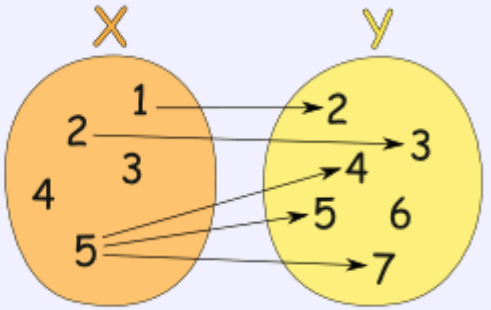
In fact we can write **f(4) = 16**.

<u>This relationship is a function because :</u>

- each input is related **to exactly one** output
- if an output isn't related to an input, it doesn't matter
- an output **can be** related to several inputs



This relationship is **not** a function:



It is a **relationship**, but it is **not a function**, for these reasons:

- Value "3" in X has no relation in Y
- Value "4" in X has no relation in Y
- Value "5" is related to more than one value in Y

(But the fact that "6" in Y is not related to does not matter)