

## Section 1.2: cont'd:

Thursday, January 15, 2015  
11:29 AM

function notation:

$f(x)$  ← pronounced "f of x"

examples:

if  $f(x) = x^2 + 2$ , find:

$$f(3) = (3)^2 + 2 = 11$$

$$f(0) = (0)^2 + 2 = 2$$

$$f(-2) = (-2)^2 + 2 = 6$$

$$f(y) = (y)^2 + 2 = y^2 + 2$$

$$f(3z) = (3z)^2 + 2 = 9z^2 + 2$$

$$f(a+b) = (a+b)^2 + 2$$

$$f(\text{☺}) = (\text{☺})^2 + 2$$

if  $f(x) = \sqrt{x+3}$ , find:

$$f(x^2+1) = \sqrt{(x^2+1)+3} = \sqrt{x^2+4}$$

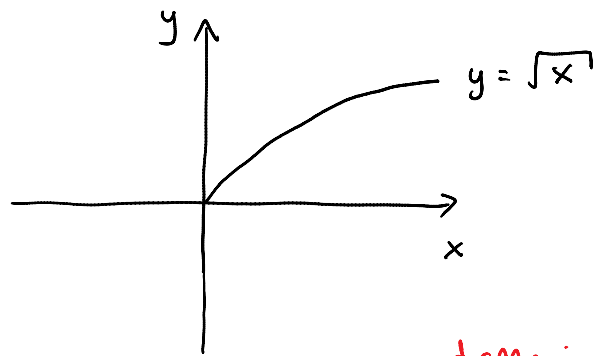
$$f(x+h) = \sqrt{x+h+3}$$

domain and range of a function:

domain: set of all possible x-values

range : " " " " y-values

example:



domain is  $[0, \infty)$

or  $\{x \mid x \geq 0\}$

range is same

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notice also  $f(x) = \sqrt{x}$

↑

if we want  $f(x)$  to be real, then  $x$  must be non-negative

→ domain

so  $f(x) = \frac{1}{x+2}$ , what's the domain?

domain is  $\{x \mid x \neq -2\}$

$(-\infty, -2) \cup (-2, \infty)$