

#4 not a function, because of $(5,6)$ and $(5,7)$

#5 a function.

domain: $\{3,4,5,7\}$

range: $\{-2,1,9\}$

#16

$$x^2 + y^2 = 25$$

- let's solve for y :

$$y^2 = 25 - x^2$$

$$y = \pm \sqrt{25 - x^2}$$

does not define a function, because, for example, when $x=3$

$$y = \pm \sqrt{16} = \pm 4$$

#20

$$y = -\sqrt{x+4}$$

defines a function, because for every "good" (i.e. $x \geq -4$) value of x , only one value of y can be obtained.

#26

$$|x| - y = 5$$

let's solve for y :

$$y = |x| - 5$$

defines a function, because for any value of x only one value for y can be obtained.

#30

$$g(x) = x^2 - 10x - 3$$

$$g(-1) = (-1)^2 - 10 \cdot (-1) - 3 = 1 + 10 - 3 = 8$$

$$g(-1) = 8$$

$$g(x+2) = (x+2)^2 - 10(x+2) - 3 = x^2 + 4x + 4 - 10x - 20 - 3$$

$$g(x+2) = x^2 - 6x - 19$$

$$g(-x) = (-x)^2 - 10 \cdot (-x) - 3 = x^2 + 10x - 3$$

$$f(-x) = x^2 + 10x - 3$$