

①

a- Function

domain $[-2, 5]$

Range $[-3, 4]$

$f: I \rightarrow R$ mapping

b- not Function

c- not Function

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

domain $[-4, 5] \cup [1, 5)$

Range $[-2, 3]$

②

a. $1 - x^2 \neq 0$

$x^2 \neq 1$

$x \neq \pm 1$

domain: $\mathbb{R} - \{-1, 1\}$

b. $x^2 \geq 9 \neq 0$

$x^2 \geq 9$

$x \geq \pm 3$

domain: $(-\infty, -3] \cup [3, \infty)$

c. domain \mathbb{R}

$$\textcircled{3} \quad f \circ g = \frac{1}{\sqrt{x^2 + x}} + 2$$

$$g \circ f = \frac{1}{\sqrt{(x+2)^2 + (x+2)}} = \frac{1}{\sqrt{x^2 + 5x + 6}}$$

الأقوى

④

$$a \quad f(x) = (-x)^4 + 2(-x)^2 + 3$$

$$f(-x) = x^4 + 2x^2 + 3$$

$$f(x) = f(-x)$$

$$b \quad f(-x) = (-x)^5 - 3x(-x)$$

$$f(-x) = (-x)^5 - 3(-x)$$

$$f(x) = f(-x)$$

$$c \quad f(-x) = 2(-x)^4 + 2(-x)^2 - 3$$

$$f(-x) = x^4 - 2x^2 - 3$$

$$f(-x) \neq f(x) \neq f(-x)$$