Self-Assessment Quiz: Functions and Its Types

Q1. Which of the following represents a function?

(A) $x^2 + y^2 = 4$

(B) $y = 3x + 2$

(C) $x = y^2$

(D) $x^2 + y = 1$

Q2. The set of all possible input values of a function is called:

(A) Range

(B) Domain

(C) Image

(D) Co-domain

Q3. If $f(x) = 2x + 3$, find $f(4)$.

(A) 7

(B) 8

(C) 9

(D) 11

Q4. A function that maps every element of the domain to a unique element in the co-domain is called:

(A) Onto

(B) One-to-one

(C) Many-to-one

(D) Constant

Q5. Which of the following is **not** a function?

(A) $f(x) = x^2$

(B) $g(x) = \sqrt{x}$

(C) $h(x) = \pm x$

(D) $k(x) = x + 5$

Q6. The function $f(x) = x^3$ is an example of a:

(A) Linear function

(B) Constant function

(C) Cubic function

(D) Quadratic function

Q7. If $f(x) = 3x - 4$ and $g(x) = x^2$, then $(f \circ g)(x) =$

(A) $3x^2 - 4$

(B) $(3x - 4)^2$

(C) $9x^2 - 4$

(D) $3x - 4x^2$

Q8. Which of the following is an **onto** function?

(A) $f(x) = x^2$ from $\mathbb{R} \to \mathbb{R}$

(B) $f(x) = 2x + 3$ from $\mathbb{R} \to \mathbb{R}$

(C) $f(x) = e^x$ from $\mathbb{R} \to \mathbb{R}$

(D) $f(x) = x^2 + 1$ from $\mathbb{R} \to \mathbb{R}$

Q9. The inverse of $f(x) = 2x + 5$ is:

(A) $f^{-1}(x) = \dfrac{x - 5}{2}$

(B) $f^{-1}(x) = \dfrac{x + 5}{2}$

(C) $f^{-1}(x) = 2x - 5$

(D) $f^{-1}(x) = \dfrac{x}{2} + 5$

Q10. A constant function has a graph that is:

(A) A parabola

(B) A straight line parallel to the y-axis

(C) A straight line parallel to the x-axis

(D) A hyperbola

Answers: 1–(B), 2–(B), 3–(D), 4–(B), 5–(C), 6–(C), 7–(A), 8–(B), 9–(A), 10–(C)