Assignment 5

Due on 2020-03-04, 23:59:59.0

1. Let $A$ be a set with cardinality $n$. There are total $700$ one-one functions from $A$ to $A$. Then value of $n$ is

- [ ] 5
- [ ] 6
- [ ] 7
- [ ] 8

No, the answer is incorrect.

2. Let $X = \{1, 2, 3\}$, $f : X \to A$ be defined as $f(1) = 3$, $f(2) = 1$, and $f(3) = 2$, then $f^{-1}(1)$ is

- [ ] 1
- [ ] 2
- [ ] 3
- [ ] Not defined

No, the answer is incorrect.

3. Let $N = \mathbb{N}$ and $f(x) = x + 15$, then $f(2)$ is

- [ ] One one
- [ ] One one one
- [ ] Only
- [ ] Only

No, the answer is incorrect.

4. A function $f : \mathbb{R} \to \mathbb{R}$ and only if, each element in the co-domain of $f$ is the image of almost one element in the domain. Fill the blank space.

- [ ] Neither one-one nor onto
- [ ] Both one-one and onto
- [ ] One one one
- [ ] Only

No, the answer is incorrect.

5. If $f : \mathbb{R} \to \mathbb{R}$ is defined as $f(x) = 3x$ and $g : \mathbb{R} \to \mathbb{R}$ is defined as $g(x) = x^2 + 1$, then $\{x | f(x) = g(x)\}$ is

- [ ] $\{1\}$
- [ ] $\{2\}$
- [ ] $\{3\}$
- [ ] Not a function

No, the answer is incorrect.

6. Let $f : X \to \mathbb{R}$ be a function, and $X$ be subset of $\mathbb{R}$. Which of the following conditions are true?

- [ ] $f$ is a function from $A \to B$ if $f : A \to B$ is a bijection

No, the answer is incorrect.

7. If a function from $A \to B$ is $f : A \to B$ defined as $f(x) = 3x$. What is $f^{-1}(6)$?

- [ ] 2
- [ ] 3
- [ ] 4
- [ ] Not a function

No, the answer is incorrect.

8. If $f$ and $g$ are one-one functions from $R$ to $R$ and $f(x) = 3x + 5$ and $g(x) = 1 - 2x$, then $f(g(x))$ is

- [ ] $x$
- [ ] $3x + 5$
- [ ] $1 - 2x$
- [ ] Not a function

No, the answer is incorrect.

9. If $f : \mathbb{R} \to \mathbb{R}$ is an onto function, then:

- [ ] $f^{-1}(a) = f(a)$
- [ ] $f^{-1}(a) = a$
- [ ] $f^{-1}(a)$ is a set
- [ ] $f^{-1}(a)$ is not a function

No, the answer is incorrect.

10. If $f(x) = 2x + 3$ is an one-one function, then:

- [ ] $f^{-1}(7) = 2$
- [ ] $f^{-1}(7) = 3$
- [ ] $f^{-1}(7)$ is a set
- [ ] $f^{-1}(7)$ is not a function

No, the answer is incorrect.

11. If $f(x) = x^2$ is an one-one function, then:

- [ ] $f^{-1}(4) = 2$
- [ ] $f^{-1}(4) = -2$
- [ ] $f^{-1}(4)$ is a set
- [ ] $f^{-1}(4)$ is not a function

No, the answer is incorrect.

12. If $f(x) = \cos(x)$ is an one-one function, then:

- [ ] $f^{-1}(0.5) = \frac{\pi}{3}$
- [ ] $f^{-1}(0.5) = \frac{\pi}{6}$
- [ ] $f^{-1}(0.5)$ is a set
- [ ] $f^{-1}(0.5)$ is not a function

No, the answer is incorrect.