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Started on	Tuesday, 18 May 2021, 10:32 AM
State	Finished
Completed on	Tuesday, 18 May 2021, 10:37 AM
Time taken	5 mins 26 secs
Marks	9.00/11.00
Grade	**8.18** out of 10.00 (**82**%)

Question 1
Correct
Mark 1.00 out of 1.00

8049409

Let f be a function from R to R (R: the set of all real numbers) and $f(x) = x^2$.

Find f({-3, -2, -1, 0, 1}).

Select one:
- ⊙ a. {0, 1, 4, 9} ✔
- ○ b. {-3, -2, -1, 0, 1}
- ○ c. {9}
- ○ d. {0, 4, 9}

Question 2
Correct
Mark 1.00 out of 1.00

8049409

Let f be a function from R to R: f(x)=2x+1,

g be a function from R to R: $g(x) = x^2$.

Then the composition of g and f is specified by

Select one:
- ○ a. $g \circ f(x) = (2x+1)x^2$
- ⊙ b. $g \circ f(x) = (2x+1)^2$ ✔
- ○ c. $g \circ f(x) = 2x^2 + 1$

Question 3
Correct
Mark 1.00 out of 1.00

8049409

Let f be a function from {a, b, c, d, e} to {1, 2, 3, 4, 5},

f(a)=2, f(b)= 4, f(c)=2, f(d)=4, f(e)=5.

What is f({a, c, e})?

Select one:
- ○ a. {2, 4, 5}
- ○ b. {1, 3, 4}
- ⊙ c. {2, 5} ✔
- ○ d. {2, 4}

Question 4
Incorrect
Mark 0.00 out of 1.00

8049409

Let f, g be functions from R to R (R: the set of all real numbers).

f(x)= x

g(x)= $\dfrac{1}{x^2+1}$

Find all onto (surjective) function(s).

Select one:
- ○ a. f
- ○ b. g
- ⊙ c. f and g ✖
- ○ d. None of the given function is surjective.

Question **5**

Correct

Mark 1.00 out of 1.00

8049409

Let f, g be functions from {a, b, c, d} to {1, 2, 3, 4, 5}.

f(a)=2, f(b)=3, f(c)=4, f(d)=5,

g(a)=2, g(b)=5, g(c)=4, g(d)=3.

Find all onto (surjective) function(s)!

Select one:

○ a. f

○ b. g

◉ c. None of the given functions is onto. ✔

○ d. f and g

Question **6**

Correct

Mark 1.00 out of 1.00

8049409

Let f be a function from X to Y.

Suppose that f(x)=y. Then

1) x is the preimage of y.

2) y is the image of x.

3) X is the domain of f.

4) Y is the codomain of f.

Which one of the above statement is FALSE?

Select one:

○ a. Statement 4

◉ b. None of the statements is false. ✔

○ c. Statement 3

○ d. Statement 2

Question **7**

Correct

Mark 1.00 out of 1.00

8049409

Assume that f, g are two functions:

f : {Tung, Tuan, Tan, Tren} → {7, 8, 9}

f(Tung)=7, f(Tuan)=8, f(Tan)=9, f(Tren)=8

g: {7, 8, 9} → {Medium, Good, Excellent}

g(7) = Medium, g(8)=Good, g(9)= Excellent

Find $g \circ f$(Tuan).

Select one:

○ a. None of these

◉ b. Good ✔

○ c. Medium

○ d. Excellent

Question **8**

Correct

Mark 1.00 out of 1.00

8049409

Let f, g be functions from {1, 2, 3, 4, 5} to {1, 2, 3, 4, 5}.

f(1)=2, f(2)=3, f(3)=4, f(4)=4, f(5)=5,

g(1)=2, g(2)=1, g(3)=4, g(4)=3, g{5)=5.

Find all one - to - one (injective) function(s)!

Select one:

○ a. f

○ b. None of the given functions is one-to-one.

○ c. f and g

◉ d. g ✔

Question **9**

Correct

Mark 1.00 out of 1.00

8049409

Let f, g be functions from R^+ to R.

(R: the set of all real numbers, R^+: the set of all positive real numbers).

f(x)= x

$g(x) = \frac{1}{x}$

Find all one-to-one (injective) function(s).

Select one:

○ a. f

○ b. Both f and g are not injective.

◉ c. f and g ✔

○ d. g

Question **10**

Correct

Mark 1.00 out of 1.00

8049409

Given that f is a function from R to R: f(x)= x-2. Then

The INVERSE function of f is specified by

$f^{-1}(y) = y +$ a real number.

What is this real number?

Answer: 2   ✔

Question **11**

Incorrect

Mark 0.00 out of 1.00

8049409

Let f, g be functions from Z to Z (Z: the set of all integers).

$f(n) = \lfloor n \rfloor$

$g(n) = \lfloor n + 0.1 \rfloor$

List all function(s) which is/are one-to-one (injective).

Select one:

◉ a. f and g are not injective. ✖

○ b. f, g

○ c. g

○ d. f

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