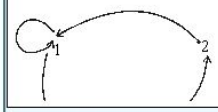
The following directed graph can be represented in form of matrix as



Answer (Please select your correct option)

- $\begin{pmatrix} 1 & 0 & 1 \\ 1 & 0 & 0 \end{pmatrix}$
- $\begin{pmatrix} 2 & 0 & 1 \\ 1 & 0 & 0 \end{pmatrix}$
- $\begin{pmatrix} 0 & 1 & 1 \\ 1 & 0 & 0 \end{pmatrix}$
- $\begin{pmatrix} 1 & 0 & 1 \\ 1 & 0 & 0 \end{pmatrix}$

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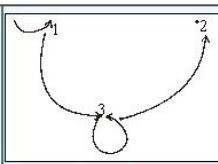

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- $\begin{pmatrix} 0 & 1 & 1 \\ 1 & 0 & 0 \\ \end{pmatrix}$
- $\begin{pmatrix} 1 & 0 & 1 \\ 1 & 0 & 0 \\ \end{pmatrix}$

An arrangement of rows and columns that specifies the truth value of a compound proposition for all possible truth values of its constituent propositions is called

Answer (Please select your correct option)

- Truth Table
- Venn Diagram
- False Table
- None of these

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The statement of the form $p \vee \sim p$ is

Answer (Please select your correct option)

- Tautology
- Contradiction
- Fallacy

A circuit with one input and one output signal is called

Answer (Please select your correct option)

- NOT-gate (or inverter)
- OR- gate
- AND- gate
- None of these

If A and B are two sets then the set which contains all those elements that belong to A or B is

Answer (Please select your correct option)

- $A \cup B$
- $A \cap B$
- $A - B$
- None of these

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If A and B are two sets then the set which contains all those elements that belong to both A and B is

Answer (Please select your correct option)

- $A \cup B$
- $A \cap B$
- $A - B$
- None of these

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Let U be the universal set, A and B are its subsets then $(A \cup B)^c$ is equal to

Answer (Please select your correct option)

- $A^c \cup B^c$
- $A^c \cup B$
- $A^c \cap B^c$
- $A \cap B^c$

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If $A = \{a, b, c\}$ is a set and $R = \{(a, c), (b, b), (c, a)\}$ is a relation on A then R is _____.

Answer (Please select your correct option)

- Transitive
- Reflexive
- Symmetric
- Transitive and Reflexive

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The inverse of given relation $R = \{(1,1),(1,2),(1,4),(3,4),(4,1)\}$ is

Answer (Please select your correct option)

- $\{(1,1),(1,2),(4,1),(4,3),(1,4)\}$
- $\{(1,1),(2,1),(4,1),(4,3),(1,4)\}$
- $\{(1,1),(2,1),(4,1),(2,3)\}$

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If $f(x) = 2x + 1$, $g(x) = x^2 - 1$ then $gof(x) =$

Answer (Please select your correct option)

- $4x^2+2$
- $2x^2 -1$
- $4x^2+4x$

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Let $A = \{x, y, z\}$ and $B = \{a, b, c\}$ be two sets then a function f defined as $\{(x, a), (y, a), (z, a)\}$ is

Answer (Please select your correct option)

- Onto
- Constant
- One-to- one
- Onto and constant

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Let f and g be the functions defined by $f(x) = 2x + 3$ and $g(x) = 3x + 2$ then composition of f and g is

Answer (Please select your correct option)

- $6x + 6$
- $5x + 5$
- $6x + 7$

Let $X = \{11,12,13\}$ and $Y = \{21,22,23\}$ be two sets, determine whether the relation $R = \{(11,21),(12,22),(13,22)\}$ is

Answer (Please select your correct option)

- One-One function
- Not one-one function
- Undetermined

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The negation of $1 < x < 10$ is $x \leq 1$ or $x \geq 10$ by using:

Answer (Please select your correct option)

- Distributive Law
- Inequality Law
- De-Morgan's Law
- None of these

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A function whose domain is a subset of the set of natural numbers and range subset of real or complex numbers is called

Answer **(Please select your correct option)**

- onto mapping
- into mapping
- sequence
- relation

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A sequence in which common difference of two consecutive terms is same is called

Answer (Please select your correct option)

- geometric mean
- harmonic sequence
- geometric sequence
- arithmetic progression

For real numbers a and b these $a+b, b-a, a \times b$ and $a \div b$ are

Answer (Please select your correct option)

- Geometric expressions
- Arithmetic expressions
- Harmonic expressions

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The same element can never appear --------- in a set.

Answer (Please select your correct option)

- twice
- once
- thrice

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If p = It is raining
q = She will go to college
"It is raining and she will not go to college" will be denoted by

Answer (Please select your correct option)

- $p \wedge : q$
- $p \wedge q$
- $: (p \wedge q)$
- $: p \wedge q$

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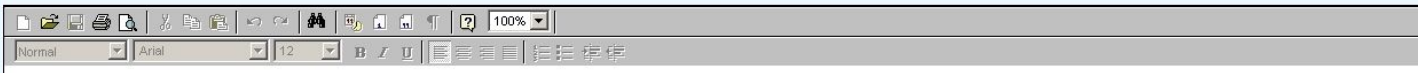
$p \wedge q$ shows

Answer (Please select your correct option)

- Conjunction of p and q
- Disjunction of p and q
- Contingency of p and q

Let $A = \{1, 2, 3\}$ and $R = \{(1,1), (1,3), (2,2), (2,3), (3,1)\}$ be a relation on A.
Then find $\overline{R}$.

Answer (Please click here to Add Answer)



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Let a and b be integers. Suppose a function Q is defined recursively as follows:

$$Q(a,b) = \begin{cases} 5 & \text{if } a < b \\ Q(a-b, b+2) + a & \text{if } b \le a \end{cases}$$

Find the value of $Q(5,3)$.

Answer (Please click here to Add Answer)

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Suppose that R and S are two reflexive relations on a set A. Prove or disprove $R \cap S$ is reflexive.

Answer (Please click here to Add Answer)

Let a and b be integers. Suppose a function Q is defined recursively as follows:

$$Q(a,b) = \begin{cases} 5 & \text{if } a < b \\ Q(a-b, b+2) + a & \text{if } b \le a \end{cases}$$

Find Q (15, 2).

Answer (Please click here to Add Answer)

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In the following diagram

(a) Write the relation R as set of ordered pairs then write inverse of R.

(b) Whether it is symmetric or anti-symmetric relation?

Answer (Please click here to Add Answer)


Z
Answer (Please click here to Add Answer)
100%
Normal
Arial
12
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The fifth term of an arithmetic sequence is 17 and ninth term is 37 find the first four terms of this sequence.

Answer (Please click here to Add Answer)