



SDJ INTERNATIONAL
COLLEGE

FYBCA Sem-1(A.y.2022-2023)

102: Mathematics (Assignments)

ASSIGNMENT 1

1. If $A = \{1, 7, 6, 9\}$, $B = \{1, 3, 4, 5, 6\}$ then find $A - B$.
2. If $U = \{x/x \in \mathbb{N}; 1 < x < 10\}$, $A = \{x/x \in \mathbb{N}; x^2 < 10\}$ and $B = \{x/x \in \mathbb{N}; x-1 < 4\}$ then verify that $(A \cup B)' = A' \cap B'$.
3. If $A = \{1, 2, 3\}$, $B = \{2, 3, 4\}$, $C = \{1, 3, 4\}$ and $D = \{2, 4, 5\}$ then prove that $(A \times B) \cap (C \times D) = (A \cap C) \times (B \cap D)$

ASSIGNMENT 2

1. If $f(x) = \frac{x+1}{x+3}$ then find $\frac{f(0)+f(-2)}{f(1)+f(3)}$.
2. The cost function of an item is $C(x) = 4x+770$ and the selling price per unit is Rs. 15. Then find the break even point.

ASSIGNMENT 3

1. check that S and T are equivalent or not. where $S: \sim[p \vee \{(\sim p) \wedge (\sim q)\}]$ and $T: \sim p \vee q$.
2. Show that $(D_8, +, \cdot, ', 1, 2, 4, 8)$ is a Boolean Algebra for all $x, y \in D_8$
 $x + y = \text{LCM of } (x, y)$
 $x \cdot y = \text{GCD of } (x, y)$
 $x' = 8/x$

ASSIGNMENT 4

1. Solve the following equations by Cramer's Rule:
 $2x + 2y + z = 4$
 $x + y + 2z = 1$
 $3x + y + z = 2$
2. $A = \begin{bmatrix} 1 & 2 & 2 \\ 1 & 2 & 2 \\ 2 & 2 & 1 \end{bmatrix}$ then prove that $A^2 = I$.

Note: Late submission will not be accepted.
Submission date will be declared later on.

Submission date:

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