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Subject: Mathematics-I (**Assignment**).

Class: B.C.A. (Sem-I)

Q.1

(A) Prove that $1 + 2 + 3 + \dots + n = \frac{n(n+1)}{2}$

(B) Let $f(x) = 2x + 1$ and $g(x) = x^2 + 2$ find $f \circ g$ and $g \circ f$.

(C) Let $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$, $A = \{1, 2, 3, 4\}$, $B = \{2, 4, 6, 8\}$.
Then Verify De' Morgan Laws.

Q.2

(A) Find x, y, z & t , if $3 \begin{pmatrix} x & y \\ z & t \end{pmatrix} = \begin{pmatrix} x & 6 \\ -1 & 2t \end{pmatrix} + \begin{pmatrix} 6 & x+y \\ z+t & 3 \end{pmatrix}$.

(B) Consider the vectors $u = (2, 5, -2, 1)$, $v = (-1, -2, 3, 4)$. Find

1. $2u + 3v$

2. $2u - v$

3. $u \cdot v$

4. $\|u\|$

5. $\|v\|$

(C) Solve by determinants: $3x - 2y = 5$, $5x + 4y = 1$