

Assignment - I

Q1: write minors and cofactors of each element of the following determinants and also evaluate the determinant

$$(a) \begin{vmatrix} 4 & 2 & 1 & 6 \\ 2 & 8 & 7 & 4 \\ 1 & 4 & 3 & 2 \end{vmatrix}$$

$$(b) \begin{vmatrix} 5 & 0 & 7 \\ 8 & -6 & -4 \\ 2 & 3 & 9 \end{vmatrix}$$

Q2: using Cramer's rule solve the system of equations $x + y + z = 1$, $3x + 5y + 6z = 4$
 $9x + 2y - 36z = 17$

$$Q3: A = \begin{bmatrix} 1 & 2 & -1 \\ 2 & 0 & 3 \\ 0 & 1 & 2 \end{bmatrix}, B = \begin{bmatrix} 3 & -1 & 1 \\ 0 & 0 & 2 \\ 4 & -3 & 2 \end{bmatrix}$$

Verify that $(A+B)^2 = A^2 + AB + BA + B^2$

Q4: Find the adjoint of the matrix

$$A = \begin{bmatrix} 1 & 2 & 5 \\ 3 & 1 & 4 \\ 1 & 1 & 2 \end{bmatrix}$$

Q5: Find the inverse of the matrix

$$A = \begin{bmatrix} 2 & 5 & 3 \\ 3 & 1 & 2 \\ 1 & 2 & 1 \end{bmatrix}$$

Assignment - II
Q! Find the HCF of 108, 288 and 360.

Q! Find the HCF of 513, 1134 and 1215

Q! Find the LCM of 16, 24, 36 and 54

Q! Two numbers are in the ratio of 15:11, if their ~~ratio~~ HCF is 13, find the numbers

Q! Find the greatest possible length which can be used to measure exactly the 4m 95 cm, 9m and 16m 65 cm,

Q! Shobha mathematics test had 75 problems i.e. 10 arithmetic, 30 algebra and 35 geometry problems. Although she answered 70% of arithmetic, 40% of the algebra and 60% of the geometry problems correctly. She did not pass the test because she got less than 60% of the problems right. How many more questions she would have needed to answer correctly to earn a 60% passing grade ~~25/75~~ [5]

Q! In an examination, 80% of the students passed in English, 85% in Mathematics and 75% in both English and Mathematics. If 40 students failed in both the subjects find the total number of students. [400]

Assignment - III

Q: Adam borrowed some money at the rate of 6% p.a. for the first two years, at the rate of 9% p.a. for the next three years, and at the rate of 14% p.a. for the period beyond five years. If he pays a total interest of Rs 11,400 at the end of nine years, how much money did he borrow [Rs. 12000]

Q: David invested certain amount in three different schemes A, B and C with the rate of interest 10% p.a., 12% p.a. and 15% p.a. respectively. If the total interest accrued in one year was Rs 3200 and the amount invested in scheme C was 150% of the amount invested in scheme A and 240% of the amount invested in scheme B, what was the amount invested in scheme B. [Rs. 5000]

Q: The difference between the compound interest and the simple interest accrued on an amount of Rs. 18,000 in 2 years was Rs. 405. What was the rate of interest. p.a. [R = 15%]

Q: The difference between compound interest and simple interest on a sum for 2 years at 10% per annum, when the interest is compounded annually is Rs. 16. If the interest were compounded half-yearly, the difference in two interest would be.