

LATEX ASSIGNMENT

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EXERCISE 12.4.6

Examine the consistency of the system of equations in 1 to 6

1.

$$x + 2y = 2 \quad (1)$$

$$2x + 3y = 3 \quad (2)$$

2.

$$2x - y = 5 \quad (3)$$

$$x + y = 4 \quad (4)$$

3.

$$x + 3y = 5 \quad (5)$$

$$2x + 6y = 8 \quad (6)$$

4.

$$x + y + z = 1 \quad (7)$$

$$2x + 3y + 2z = 2 \quad (8)$$

$$ax + ay + 2az = 4 \quad (9)$$

5.

$$3x - y - 2z = 2 \quad (10)$$

$$2y - z = -1 \quad (11)$$

$$3x - 5y = 3 \quad (12)$$

6.

$$5x - y + 4z = 5 \quad (13)$$

$$2x + 3y + 5z = 2 \quad (14)$$

$$5x - 2y + 6z = -1 \quad (15)$$

Solve system of linear equations, using matrix method, in 7 to 14.

7.

$$5x + 2y = 4 \quad (16)$$

$$7x + 3y = 5 \quad (17)$$

8.

$$2x - y = -2 \quad (18)$$

$$3x + 4y = 3 \quad (19)$$

9.

$$4x - 3y = 3 \quad (20)$$

$$3x - 5y = 7 \quad (21)$$

10.

$$5x + 2y = 3 \quad (22)$$

$$3x + 2y = 5 \quad (23)$$

11.

$$2x + y + z = 1 \quad (24)$$

$$x - 2y - z = \frac{3}{2} \quad (25)$$

$$3y - 5z = 9 \quad (26)$$

12.

$$x - y + z = 4 \quad (27)$$

$$2x + y - 3z = 0 \quad (28)$$

$$x + y + z = 2 \quad (29)$$

13.

$$2x + 3y + 3z = 5 \quad (30)$$

$$x - 2y + z = -4 \quad (31)$$

$$3x - y - 2z = 3 \quad (32)$$

14.

$$x - y + 2z = 7 \quad (33)$$

$$3x + 4y - 5z = -5 \quad (34)$$

$$2x - y + 3z = 12 \quad (35)$$

15. If $A = \begin{pmatrix} 2 & -3 & 5 \\ 3 & 2 & -4 \\ 1 & 1 & -2 \end{pmatrix}$, find A^{-1} . Using A^{-1} solve the system of equations

$$2x - 3y + 5z = 11 \quad (36)$$

$$3x + 2y - 4z = -5 \quad (37)$$

$$x + y - 2z = -3 \quad (38)$$

16. The cost of $4kg$ onion, $3kg$ wheat and $2kg$ rice is ₹ 60. The cost of $2kg$ onion, $4kg$ wheat and $6kg$ rice is ₹ 90. The cost of $6kg$ onion, $2kg$ wheat and $3kg$ rice is ₹ 70. Find cost of each item per kg by matrix method.