

# Organizing Data Using Matrices Assignment

Find the elements of the following matrices

$$M = \begin{bmatrix} -2 & 5 & 6 \\ 3 & 4 & -3 \\ 2 & 1 & 0 \end{bmatrix}$$

1. Find  $M_{32} =$

2. Find  $M_{23} =$

$$F = \begin{bmatrix} -2 & 3 & 2 & 6 & -1 \\ 4 & -5 & 12 & 3 & -7 \\ 8 & -9 & 8 & 10 & 11 \\ -14 & 1 & 0 & 2 & -4 \end{bmatrix}$$

3. Find  $F_{42} =$

4. Find  $F_{35} =$

$$H = \begin{bmatrix} 3 & -2 & 6 & -3 \\ 1 & 0 & 2 & -1 \\ -4 & 5 & -6 & 7 \\ -2 & 3 & -4 & 5 \end{bmatrix}$$

5. Find  $H_{24} =$

6. Find  $H_{33} =$

Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

## Organizing Data Using Matrices Assignment

Solve the following problems involving matrices.

The matrix below shows the number of people interviewed regarding two known brands of soap.

	A	B
M	25	30
F	21	29

7. How many are using brand A?

8. How many females were interviewed and using brand B?

9. How many males were interviewed or using brand A?

The Matrix below shows the number of students enrolled in Algebra, Physics and Chemistry.

	A	P	C
M	120	132	112
F	153	136	142

10. How many are enrolled in physics?

11. How many are females and enrolled in algebra?

12. How many are males or enrolled in chemistry?

Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

## Organizing Data Using Matrices Assignment

Identify the Element of a matrix in the given data.

Below is the economy of country Y in percent for the last 3 years.

	2014	2015	2016
Q1	5.6	5	6.8
Q2	6.8	5.9	7
Q3	5.7	6.2	7
Q4	6.7	6.5	6.6

13. Find  $C_{13}$ , What does it represent?

14. Find  $C_{32}$ , What does it represent?

Below is the number of participants in the sport festival of school X every year in the following sports

	2014	2015	2016
Volleyball	42	52	55
Basketball	50	55	60
Table Tennis	23	25	28
Badminton	25	27	29

15. Find  $S_{33}$ , What does it represent?

16. Find  $S_{22}$ , What does it represent?

17. Find  $S_{43}$ , What does it represent?

Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

## Organizing Data Using Matrices Assignment

Organized the following data by Constructing Matrices.

Distribution of patients in XYZ Hospital According to Religion and Gender

Religion	Male	Female
Roman Catholic	60	75
Buddhist	26	30
Protestant	3	14
Jewish	16	8

18. Create a  $4 \times 2$  matrix for the table above. Label the Matrix A.

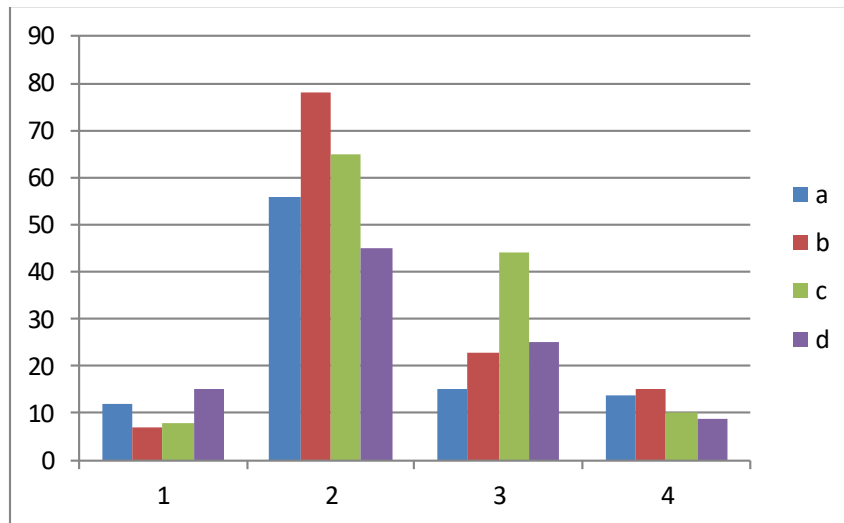
19. Create a  $4 \times 2$  matrix and label it matrix B for the level of Mentally-Retarded in Hospital YYY : for not anxious, there are 9 males and 21 females; for low anxiety, there are 16 male and 10 females; for moderate anxiety, there are 2 males and 4 females; and for high anxiety, there are 1 male and 7 females.

Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

## Organizing Data Using Matrices Assignment

20. Below are the score of the students in 4 physics exam, create a 4X4 matrix from the data in the table and

label it matrix C.



# Organizing Data Using Matrices Assignment

Answer:

Find the elements of the following matrices

$$M = \begin{bmatrix} -2 & 5 & 6 \\ 3 & 4 & -3 \\ 2 & 1 & 0 \end{bmatrix}$$

1. Find  $M_{32} = 1$

2. Find  $M_{23} = -3$

$$F = \begin{bmatrix} -2 & 3 & 2 & 6 & -1 \\ 4 & -5 & 12 & 3 & -7 \\ 8 & -9 & 8 & 10 & 11 \\ -14 & 1 & 0 & 2 & -4 \end{bmatrix}$$

3. Find  $F_{42} = 1$

4. Find  $F_{35} = 11$

$$H = \begin{bmatrix} 3 & -2 & 6 & -3 \\ 1 & 0 & 2 & -1 \\ -4 & 5 & -6 & 7 \\ -2 & 3 & -4 & 5 \end{bmatrix}$$

5. Find  $H_{24} = -1$

6. Find  $H_{33} = -6$

Solve the following problems involving matrices.

The matrix below shows the number of people interviewed regarding two known brands of soap.

	A	B
M	25	30
F	21	29

7. How many are using brand A?  $25+21 = 46$

8. How many females were interviewed and using brand B? 29

9. How many males were interviewed or using brand A?  $(25+30) + (25+21) - 25 = 55 + 46 - 25 = 76$

## Organizing Data Using Matrices Assignment

The Matrix below shows the number of students enrolled to Algebra, Physics and Chemistry.

$$\begin{matrix} & \mathbf{A} & \mathbf{P} & \mathbf{C} \\ \mathbf{M} & [120 & 132 & 112] \\ \mathbf{F} & [153 & 136 & 142] \end{matrix}$$

10. How many are enrolled in physics?  $132 + 136 = 268$

11. How many are females and enrolled in algebra? 153

12. How many are males or enrolled in chemistry?  $(120 + 132 + 112) + (112 + 142) - 112 = 346 + 254 - 112 = 488$

**Identify the Element of a matrix in the given data.**

Below is the economy of country Y in percent for the last 3 years.

	2014	2015	2016
Q1	5.6	5	6.8
Q2	6.8	5.9	7
Q3	5.7	6.2	7
Q4	6.7	6.5	6.6

13. Find  $C_{13}$ , What does it represent? 6.8, country Y performance in the first quarter of 2016.

14. Find  $C_{32}$ , What does it represent? 6.2, country Y performance in the third quarter of 2015.

Below is the number of participants in the sport festival of school X every year in the following sports

	2014	2015	2016
Volleyball	42	52	55
Basketball	50	55	60
Table Tennis	23	25	28
Badminton	25	27	29

15. Find  $S_{33}$ , What does it represent? 28, number of participants in table tennis in the sport festival 2016

16. Find  $S_{22}$ , What does it represent? 55, number of participants in basketball in the sport festival 2015

17. Find  $S_{43}$ , What does it represent? 29, number of participants in badminton in the sport festival 2016

## Organizing Data Using Matrices Assignment

Organized the following data by Constructing Matrices.

Distribution of patients in XYZ Hospital According to Religion and Gender

Religion	Male	Female
Roman Catholic	60	75
Buddhist	26	30
Protestant	3	14
Jewish	16	8

18. Create a 4X2 matrix for the table above. Label the Matrix A.

$$A = \begin{bmatrix} 60 & 75 \\ 26 & 30 \\ 3 & 14 \\ 16 & 8 \end{bmatrix}$$

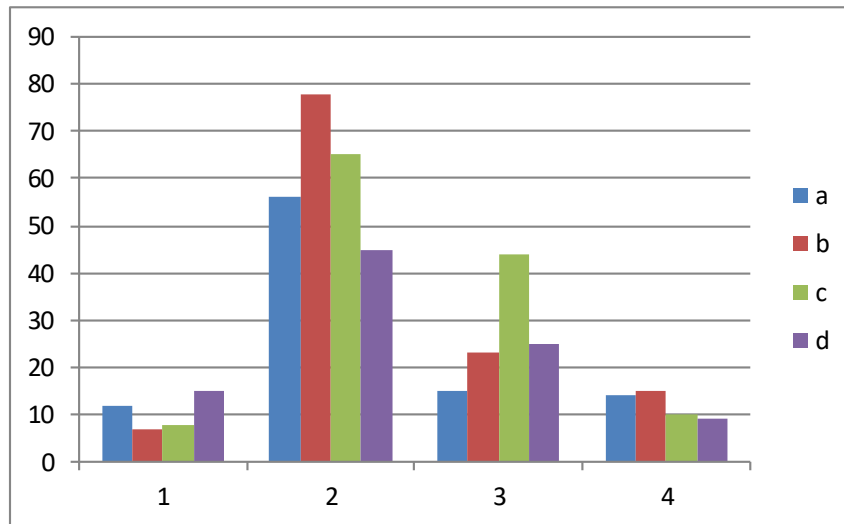
19. Create a 4X2 matrix and label it matrix B for the level of Mentally-Retarded in Hospital YYY: for not anxious, there are 9 males and 21 females; for low anxiety, there are 16 males and 10 females; for moderate anxiety, there are 2 males and 4 females; and for high anxiety, there are 1 male and 7 females.

$$B = \begin{bmatrix} 9 & 21 \\ 16 & 10 \\ 2 & 4 \\ 1 & 7 \end{bmatrix}$$



## Organizing Data Using Matrices Assignment

20. Below are the scores of the students in 4 physics exam, create a 4X4 matrix from the data in the table and label it matrix C.



$$C = \begin{bmatrix} 12 & 6 & 7 & 15 \\ 56 & 78 & 65 & 45 \\ 15 & 24 & 44 & 25 \\ 14 & 15 & 10 & 8 \end{bmatrix}$$