

Practice 4-1

Organizing Data Into Matrices

Write the dimensions of each matrix. Identify the indicated element.

1. $\begin{bmatrix} 2 \\ -3 \\ -6 \end{bmatrix}; a_{21}$

2. $\begin{bmatrix} 5 & -7 & 23 & 10 \\ -9 & 3 & 5 & -2 \\ 1 & 9 & 0 & 2 \end{bmatrix}; a_{23}$

3. $\begin{bmatrix} 2 & 3 & -9 \\ 12 & -8 & 0 \end{bmatrix}; a_{21}$

4. $\begin{bmatrix} x & y & z \\ a & b & c \\ p & q & r \end{bmatrix}; a_{32}$

5. $\begin{bmatrix} 2 & -2 \\ 3 & -3 \\ 4 & -4 \end{bmatrix}; a_{31}$

6. $[5 \ 8 \ -7 \ -4]; a_{14}$

Use the table for Exercises 7–10.

7. Display the data in a matrix with the types of unemployment in the columns.
8. State the dimensions of the matrix.
9. Identify a_{21} , and tell what it represents.
10. Identify a_{16} , and tell what it represents.

Unemployment by Category

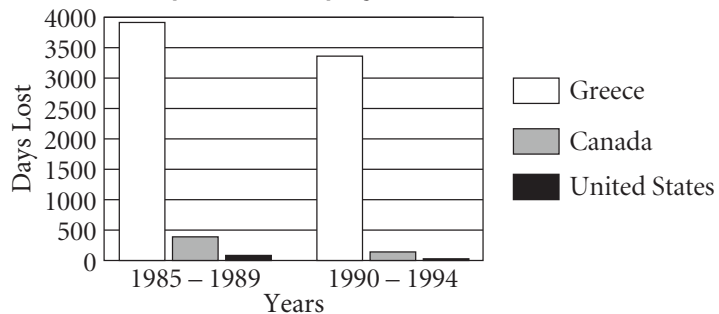
| | June, 1992 | June, 1996 |
|-----------------------|------------|------------|
| Construction | 17.6% | 9.5% |
| Manufacturing | 8.3% | 5.1% |
| Transportation | 5.4% | 4.5% |
| Sales | 8.7% | 6.4% |
| Finance | 4.0% | 2.6% |
| Services | 6.6% | 5.1% |
| Government | 3.5% | 2.7% |

Source: *U.S. News & World Report*

Use the table at the right for Exercises 11–14.

11. Write a matrix M to represent the data in the graph, with columns representing years.
12. What are the dimensions of this matrix?
13. What does the first row represent?
14. What does m_{32} represent?

Days Lost to Strikes per 1,000 Employees



Source: *U.S. News & World Report*

All rights reserved.

© Pearson Education, Inc., publishing as Pearson Prentice Hall.