

MORE PRACTICE - Matrix Basics

Put the following data in a matrix form, then state the dimensions of the matrix.

1. These are the number of students enrolled in the following foreign languages.

	Spanish	French	Japanese	German
Freshman	8	9	3	0
Sophomores	15	10	10	9
Juniors	11	9	7	6
Seniors	8	9	5	4

$$\begin{bmatrix} 8 & 9 & 3 & 0 \\ 15 & 10 & 10 & 9 \\ 11 & 9 & 7 & 6 \\ 8 & 9 & 5 & 4 \end{bmatrix} \quad 4 \times 4$$

2. The ski resort brought in these amounts of money in these categories.

	Monday	Tuesday	Wednesday	Thursday	Friday
Lift Tickets	\$252.00	\$203.00	\$195.00	\$224.00	\$350.00
Ski Rentals	\$188.00	\$155.00	\$161.00	\$155.00	\$206.00
Concessions	\$112.23	\$81.99	\$88.59	\$103.55	\$176.34

$$\begin{bmatrix} 252.00 & 203.00 & 195.00 & 224.00 & 350.00 \\ 188.00 & 155.00 & 161.00 & 155.00 & 206.00 \\ 112.23 & 81.99 & 88.59 & 103.55 & 176.34 \end{bmatrix} \quad 3 \times 5$$

State the dimensions of the following matrices:

3.  $[2 \ 3 \ 2]$   
 $1 \times 3$

4.  $\begin{bmatrix} 2 \\ 7 \\ 9 \\ 2 \end{bmatrix}$   
 $4 \times 1$

5.  $\begin{bmatrix} 2 & 4 & 1 \\ -1 & 0 & 6 \\ 9 & -2 & 8 \end{bmatrix}$   
 $3 \times 3$

6.  $\begin{bmatrix} 4 \\ 7 \end{bmatrix}$   
 $2 \times 1$

7.  $\begin{bmatrix} 1 & 3 & -1 & 9 \\ 4 & 7 & 0 & -5 \\ 1 & 6 & 4 & -2 \end{bmatrix}$   
 $3 \times 4$

The following questions refer to matrices in #3 – #7.

8. Which of these matrices are row matrices? 3

9. Which of these matrices are column matrices? 4, 6

10. Which of these matrices are square matrices? 5

11. For #7, what is element  $a_{32}$ ? 6

12. For #7, what is element  $a_{23}$ ? 0