EXERCISES

Perform the indicated operation.

18. $\begin{bmatrix} 4 & -5 \\ 2 & 3 \end{bmatrix} + \begin{bmatrix} -1 & 3 \\ -7 & 4 \end{bmatrix}$

19. $\begin{bmatrix} -1 & 8 \\ 2 & -3 \end{bmatrix} + \begin{bmatrix} 7 & -4 \\ 6 & -1 \end{bmatrix}$

20. $\begin{bmatrix} 10 & -4 \\ 5 & 1 \end{bmatrix} - \begin{bmatrix} 0 & 9 \\ 2 & 7 \end{bmatrix}$

21. $\begin{bmatrix} -2 & 3 & 5 \\ -1 & 6 & -2 \end{bmatrix} - \begin{bmatrix} -4 & 7 & 5 \\ -8 & 0 & -9 \end{bmatrix}$

22. $-3\begin{bmatrix} 5 & -2 \\ 3 & 6 \end{bmatrix}$

23. $8\begin{bmatrix} 8 & 4 & 5 \\ -1 & 6 & -2 \end{bmatrix}$

3.6 Multiply Matrices   pp. 195–202

EXAMPLE

Find AB if $A = \begin{bmatrix} 2 & -3 \\ -1 & 0 \\ 4 & 5 \end{bmatrix}$ and $B = \begin{bmatrix} -2 & 3 \\ 3 & 1 \end{bmatrix}$.

$$AB = \begin{bmatrix} 2 & -3 \\ -1 & 0 \\ 4 & 5 \end{bmatrix}\begin{bmatrix} -2 & 3 \\ 3 & 1 \end{bmatrix} = \begin{bmatrix} 2(-2) + (-3)(3) & 2(3) + (-3)(1) \\ -1(-2) + 0(3) & -1(3) + 0(1) \\ 4(-2) + 5(3) & 4(3) + 5(1) \end{bmatrix}$$

$$= \begin{bmatrix} -13 & 3 \\ 2 & -3 \\ 7 & 17 \end{bmatrix}$$

EXERCISES

Find the product.

24. $\begin{bmatrix} -1 & -1 \end{bmatrix}\begin{bmatrix} 8 & 2 \\ -6 & -9 \end{bmatrix}$

25. $\begin{bmatrix} 11 & 7 \\ 1 & -5 \end{bmatrix}\begin{bmatrix} 0 & -5 \\ 4 & -3 \end{bmatrix}$

26. $\begin{bmatrix} 4 & -1 \\ 1 & 7 \end{bmatrix}\begin{bmatrix} 5 & -2 & 4 \\ 3 & 12 & 6 \end{bmatrix}$

27. $\begin{bmatrix} -2 & 5 \\ 0 & 3 \end{bmatrix}\begin{bmatrix} 6 & -3 & 5 \\ 2 & 0 & -1 \end{bmatrix}$

28. **MANUFACTURING** A company manufactures three models of flat-screen color TVs: a 19 inch model, a 27 inch model, and a 32 inch model. The TVs are shipped to two warehouses. The number of units shipped to each warehouse are given in matrix A, and the prices of the models are given in matrix B. Find the total value of the TVs in each warehouse by model.

Matrix A

	19 in.	27 in.	32 in.
Warehouse 1	5,000	6,000	8,000
Warehouse 2	4,000	10,000	5,000

Matrix B

	Price
19 inch	$109.99
27 inch	$319.99
32 inch	$549.99