NAME _____ DATE _____

Practice

Student Edition
Pages 199–204

Multiplying Matrices

Find the dimensions of each matrix M.

1. $A_{7\times 4} \cdot B_{4\times 3} = M$

2. $A_{3\times 5} \cdot M = B_{3\times 8}$

3. $M \cdot A_{1\times 6} = B_{2\times 6}$

Perform the indicated operations, if possible.

4. $2\begin{bmatrix} 2 & 4 \\ 3 & -1 \end{bmatrix} + 3\begin{bmatrix} -3 & 0 \\ 2 & 5 \end{bmatrix}$

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

6. $\begin{bmatrix} 2 & 4 \\ 3 & -1 \end{bmatrix} \cdot \begin{bmatrix} -3 & 0 \\ 2 & 5 \end{bmatrix} + 2\begin{bmatrix} -3 & 0 \\ 2 & 5 \end{bmatrix}$

7. $\begin{bmatrix} 3 & -2 & 7 \\ 6 & 0 & -5 \end{bmatrix} \cdot \begin{bmatrix} 3 & -2 & 7 \\ 6 & 0 & -5 \end{bmatrix}$

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

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

Find the new coordinates of the vertices of each polygon after the polygon is rotated 90° counterclockwise about the origin.

10. triangle ABC with vertices $A(2, 5)$, $B(5, 8)$, $C(3, 15)$

11. square $DEFG$ with vertices $D(-1, 2)$, $E(-1, -2)$, $F(3, -2)$, $G(3, 2)$

12. rectangle $HIJK$ with vertices $H(-1, 1)$, $I(1, -1)$, $J(7, 5)$, $K(5, 7)$