LESSON 4.2

NAME _____ DATE _____

Practice A

For use with pages 208–213

State whether the product *AB* is defined. If so, give the dimensions of *AB*.

1. A: 2×2, B: 3×2

2. A: 3×4, B: 4×3

3. A: 2×5, B: 5×1

4. A: 3×2, B: 2×2

5. A: 4×1, B: 4×1

6. A: 3×4, B: 4×5

7. A: 3×5, B: 3×3

8. A: 2×4, B: 4×4

9. A: 1×6, B: 6×1

Complete the next step of the matrix multiplication.

10. $\begin{bmatrix} 3 & 1 \\ 4 & -2 \end{bmatrix}\begin{bmatrix} 2 & 1 & 0 \\ 3 & -2 & 4 \end{bmatrix} = \begin{bmatrix} (3)(2) + (1)(3) & (3)(1) + (1)(-2) & (3)(0) + (1)(4) \\ ? & ? & ? \end{bmatrix}$

11. $\begin{bmatrix} 1 \\ -2 \\ 3 \end{bmatrix}\begin{bmatrix} -4 & 6 \end{bmatrix} = \begin{bmatrix} 1(-4) & 1(6) \\ ? & ? \\ ? & ? \end{bmatrix}$

12. $\begin{bmatrix} 2 & 1 \\ 0 & -3 \end{bmatrix}\begin{bmatrix} -2 & -1 \\ 1 & 4 \end{bmatrix} = \begin{bmatrix} (2)(-2) + (1)(1) & ? \\ (0)(-2) + (-3)(1) & ? \end{bmatrix}$

Find the product. If it is not defined, state the reason.

13. $\begin{bmatrix} 2 & 3 \end{bmatrix}\begin{bmatrix} 1 \\ 4 \end{bmatrix}$

14. $\begin{bmatrix} 1 & 0 \end{bmatrix}\begin{bmatrix} 1 & 0 \\ 2 & 1 \end{bmatrix}$

15. $\begin{bmatrix} 1 & -1 \end{bmatrix}\begin{bmatrix} 1 & 2 \\ -1 & 1 \end{bmatrix}$

16. $\begin{bmatrix} 3 \\ 1 \end{bmatrix}\begin{bmatrix} 1 & -4 \end{bmatrix}$

17. $\begin{bmatrix} -1 \\ -2 \end{bmatrix}\begin{bmatrix} 2 & -3 \end{bmatrix}$

18. $\begin{bmatrix} 2 \\ 3 \end{bmatrix}\begin{bmatrix} 1 & -2 \\ 3 & 1 \end{bmatrix}$

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

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

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

22. ***Senior Play*** The senior class play was performed on three different evenings. The attendance for each evening is shown in the table below. Adult tickets sold for $3.50. Student tickets sold for $2.50. Use matrix multiplication to determine how much money was taken in each night.

Performance	*Adults*	*Students*
Opening night	420	300
Second night	400	450
Final night	510	475