Name _____ Date _____

Advanced Algebra II – Assignment 4-3

Use the following matrices for Problems 1-9.

$A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ $B = \begin{bmatrix} 3 & 5 \\ 5 & 3 \end{bmatrix}$ $C = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

1. AB
2. BA
3. AC

4. CA
5. A^2
6. B^2

7. Is multiplication of matrices commutative? In other words, does the order of the matrices matter in matrix multiplication?

8. Does the order of the matrices matter in matrix multiplication if one of two matrices multiplied is the identity matrix?

9. Find C^{100}

Use the matrices below to answer questions 10 -12

$$A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} \qquad B = \begin{bmatrix} -2 & 1 \\ 1.5 & -0.5 \end{bmatrix} \qquad C = \begin{bmatrix} -1 & 3 \\ 5 & -2 \end{bmatrix}$$

10. AB

11. BA

12. ABC

Review

Solve for x and y.

13. $2x + y = 7$
$-3x + y = -4$

14. $5x - y = 12$
$2x + 2y = 6$