Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ALGEBRA II**

Review for Sections 4.1 – 4.3 Test

1. Give the dimensions of each matrix
2. $\left[\begin{matrix}5&7 -3 0\\-2&1 8 11\end{matrix}\right]$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b) $\left[\begin{array}{c}7\\2\\6\end{array}\right]$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Tracy and Ron both collect maps. Together they have a variety of maps from the 1960s to the 1990s. Matrix M shows the number of each type of map they have.

**Continents 60s 70s 80s 90s**

$$M=\left[\begin{array}{c}\begin{matrix}Europe& 3 \\Asia& 5 \end{matrix}\begin{matrix} 1& 4 2\\ 3& 6 3\end{matrix}\\\begin{matrix}North America&2 \\Africa& 8 \end{matrix}\begin{matrix} 7 9& 5\\ 5 4& 6\end{matrix}\end{array}\right]$$

1. What are the dimensions of matrix M?
2. Describe the data in location $m\_{42}$.
3. Describe the data in location $m\_{21}$.
4. Write an expression, in matrix notation, for the total number of maps of Africa that Ron and Tracy have.
5. Use matrices *A* and *B* to perform the indicated operations. If an operation is not possible, explain why. Show all of your work!

*A* =  *B* =  C = $\left[\begin{matrix}1&3 4\\-1&-3 -8\end{matrix}\right]$

1. 

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1. 

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. *A + C*

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. 

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. *A x B*  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. *A x C*  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Use your graphing calculator to find the product.

 $\left[\begin{matrix}-2&3\\5&4\end{matrix} \begin{matrix}7&7.2\\2.3&4\end{matrix}\right]\left[\begin{array}{c}4.5 6.7 8\\9 4.3 -1\\2.4 -9 -7\\2 7 -3.4\end{array}\right]$

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. 

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1. Determine whether the following system is inconsistent, dependent, or independent.
2. $\left\{\begin{array}{c}2+y=2x\\\frac{1}{2}y=x-1\end{array}\right.$
3. $\left\{\begin{array}{c}8+y=\frac{3}{4}x\\\frac{4}{3}y=x+2\end{array}\right.$
4. $\left\{\begin{array}{c}7-y=2x\\3y=x-6\end{array}\right.$
5. Solve each system using any method.
6. $\left\{\begin{array}{c}4x-5y=20\\-\frac{1}{2}x+\frac{5}{8}y=\frac{5}{4}\end{array}\right.$
7. $\left\{\begin{array}{c}2x+y=3\\3x-2y=8\end{array}\right.$
8. The perimeter of a rectangular swimming pool is 100 meters. Twice the length is equal to 6 times the width.
9. Find the length and width of the pool.
10. Find the area of the pool.