**Algebra 2 Notes**

**Objective: Multiplying Matrices**

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

**Starter: Find matrix X.**

** **

**Multiplying Matrices:**

$$A\_{m×n}∙B\_{n×r}= AB\_{m×r}$$

**Ex:** $A\_{1×2}∙B\_{2×2}= $

**Ex:** $X\_{3×4}∙Y\_{3×4}= $

**Ex:** $C\_{6×2}∙D\_{2×6}= $

**Ex:  **

* **Multiply the elements of each row of the first matrix by the elements of each column of the second matrix**

**Ex: multiply** $RS$ ** **

**Can we find SR?**

**Is matrices multiplication commutative? (i.e. AB=BA)**

**Ex: Find each product if** $A=\left[\begin{matrix}1&-2\\4&-3\end{matrix}\right]$ **and** $B=\left[\begin{matrix}0&2\\-1&7\end{matrix}\right]$

$AB=$$BA=$

**OLYMPICS The table shows the number of each type of medal won by the top five countries in the 2000 Summer Olympics. A gold medal is worth 3 points, a silver is worth 2 points, and a bronze is worth 1 point. Find the total number of points scored by each country.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Country** | Gold | **Silver** | **Bronze** |
| United States | 40 | 24 | 33 |
| Russia | 32 | 28 | 28 |
| China | 28 | 16 | 15 |
| Australia | 16 | 25 | 17 |
| Germany | 13 | 17 | 26 |

Source: 2001 ESPN Sports Almanac

\**Plan*: create two matrices one 5x3 matrix to represent the Medals, matrix M and one 3x1 matrix to represent the Points, matrix P. \*