Solve the following using Matrix multiplication (show ***ALL*** work below):

Name:

Period:

1. Find **AB** if A = $\left[\begin{matrix}7&0\\5&3\end{matrix}\right]$ and B = $\left[\begin{matrix}3&-3&6\\5&4&-2\end{matrix}\right]$ and C = $\left[\begin{matrix}6&-1&4\\2&-2&-1\end{matrix}\right]$

**AB** = $\left[\begin{matrix}&&\\&&\end{matrix}\right]$

 (2 x 3)

1. Find **AC**

**AC** = $\left[\begin{matrix}&&\\&&\end{matrix}\right]$

 (2 x 3)

1. Can you solve the following equation? **BC**

If yes show all work below; if no fully explain why not.

Circle one choice: YES NO

Justify here:

1. Is matrix multiplication commutative? Test below and show all work necessary to justify:

**AB: BA:**

**AB** = $\left[\begin{matrix}&&\\&&\end{matrix}\right]$ **BA** = $\left[\begin{matrix}&&\\&&\end{matrix}\right]$

Circle one choice: YES NO

1. Given the following: H = $\left[\begin{matrix}3&-8&1\\1&0&2\end{matrix}\right]$ and K = $\left[\begin{matrix}5&3&\begin{matrix}1&0\end{matrix}\\6&0&\begin{matrix}2&-3\end{matrix}\\-5&3&\begin{matrix}2&2\end{matrix}\end{matrix}\right]$

Predict the dimensions of the solution matrix of the following equation? **HK** = \_\_\_\_ x \_\_\_\_

1. Find the value for the matrix **CK** (Show ***ALL*** work necessary to solve):

**CK** = $\left[\begin{matrix}&&\begin{matrix}&\end{matrix}\\&&\begin{matrix}&\end{matrix}\end{matrix}\right]$