**Secondary I Honors Matrices Unit** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Identity and Inverse Matrices** Hour\_\_\_\_\_\_\_\_\_\_\_

1. Find $\frac{1}{\left|A\right|}$ if $A=\left[\begin{matrix}6&-7\\-2&4\end{matrix}\right]$ 2. What is$\frac{1}{\left|A\right|}$ used for? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Why do we use inverses of 4. Write a 4X4 identity matrix.

matrices?

**For each matrix state if an inverse exists**

$5. \left[\begin{matrix}-9&-9\\2&2\end{matrix}\right]$ 6. $\left[\begin{matrix}-2&1\\-6&1\end{matrix}\right]$

7. $\left[\begin{matrix}4&-5\\-9&6\end{matrix}\right]$ 8. $\left[\begin{matrix}0&0\\-6&4\end{matrix}\right]$

**Find the inverse of each matrix**

 9. $\left[\begin{matrix}11&-5\\2&-1\end{matrix}\right]$ 10. $\left[\begin{matrix}0&-2\\-1&-9\end{matrix}\right]$

 11. $\left[\begin{matrix}-1&7\\-1&7\end{matrix}\right]$ 12. $\left[\begin{matrix}1&-1\\-6&-3\end{matrix}\right]$

13. $\left[\begin{matrix}3&-2\\-4&6\end{matrix}\right]$ 14. $\left[\begin{matrix}-6&11\\-4&7\end{matrix}\right]$

15. $\left[\begin{matrix}-9&-6\\-5&-4\end{matrix}\right]$ 16. $\left[\begin{matrix}5&-8\\6&-9\end{matrix}\right]$

17. $\left[\begin{matrix}2&-1&-3\\4&1&0\\3&-4&-2\end{matrix}\right]$ 18. $\left[\begin{matrix}1&3&1\\2&0&1\\3&2&2\end{matrix}\right]$

Solve for x.

 $A=\left[\begin{matrix}-5&5\\1&-2\end{matrix}\right]$ $B=\left[\begin{matrix}9&3\\0&3\end{matrix}\right]$ $C=\left[\begin{matrix}1&1\\2&1\end{matrix}\right]$

19. $AX=B$ 20. $CX=A$