MARKS

NAME:

CLASS:

INVERSE OF MATRICES

1

If $A = \begin{bmatrix} 3 & 1 & 1 \\ 1 & 3 & 1 \\ 1 & 1 & 3 \end{bmatrix}$, the cofactor of A is $\begin{bmatrix} 8 & x+y & -2 \\ -2 & 8 & -2 \\ -2 & -2 & x+3y \end{bmatrix}$.Determine the values of x and y.

a) x = $\square$ b) y = $\square$ c)determinant of A = $\square$

e) $A^{-1} = \begin{bmatrix} \square & \square & \square \\ \square & \square & \square \\ \square & \square & \square \end{bmatrix}$

2 If $A = \begin{bmatrix} 2 & 3 & 1 \\ 3 & 4 & -2 \\ 1 & 1 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} -10 & 5 & 10 \\ 8 & -3 & -7 \\ 1 & -1 & 1 \end{bmatrix}$ find

a) AB = $\square$

b) $A^{-1} = \frac{\square}{\square}\square = \frac{\square}{\square}\begin{bmatrix} \square & \square & \square \\ \square & \square & \square \\ \square & \square & \square \end{bmatrix} = \begin{bmatrix} \square & \square & \square \\ \frac{\square}{\square} & \frac{\square}{\square} & \frac{\square}{\square} \\ \frac{\square}{\square} & \frac{\square}{\square} & \frac{\square}{\square} \end{bmatrix}$

3 Given that $A^2 - 4A + 3I = 0$ where I is 3x3 identity. Hence deduce A^3 and A^{-1} .

$A^3 = \square A - \square I$

$A^{-1} = \frac{\square}{\square}(\square I - \square)$

4

It is given that $P = \begin{bmatrix} 0 & 0 & 1 \\ -1 & m & -1 \\ 3 & 2 & 0 \end{bmatrix}$. If $P^{-1}\begin{bmatrix} 5 \\ 5 \\ 5 \end{bmatrix} = \begin{bmatrix} -3 \\ 7 \\ 5 \end{bmatrix}$,find the value of m.

m = $\square$

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