INSTRUCTIONS: Start at **BEGIN**, Solve the question in the **square** then **SHADE** your solution with a coloured pencil or crayon. REPEAT and follow the **MAZE to THE END**. At the end add up the scores accordingly.

BEGIN

Find the Determinant of A.

$A = \begin{pmatrix} 2 & 1 \\ 0 & 3 \end{pmatrix}$

Det A = 6

Det A = -6

$A = \begin{pmatrix} 0 & 6 \\ 2 & 1 \end{pmatrix}$, $B = \begin{pmatrix} 9 & 3 \\ 1 & 2 \end{pmatrix}$

calculate A + B

$\begin{pmatrix} 9 & 9 \\ 3 & 3 \end{pmatrix}$

$\begin{pmatrix} 9 & 9 \\ 7 & 3 \end{pmatrix}$

$\begin{pmatrix} 18 & 18 \\ 14 & -6 \end{pmatrix}$

$\begin{pmatrix} 9 & 9 \\ 7 & 3 \end{pmatrix} = M$

Calculate 2M

$\begin{pmatrix} 9 & 16 \\ 4 & 4 \end{pmatrix}$

$\begin{pmatrix} 2 & -1 \\ -3 & 8 \end{pmatrix}$

$A = \begin{pmatrix} 8 & 1 \\ 3 & 2 \end{pmatrix}$

Adjoint A =

$P = \begin{pmatrix} 1 & 4 \\ 7 & 3 \end{pmatrix}$

Calculate 4P

$\begin{pmatrix} 4 & 16 \\ 28 & 12 \end{pmatrix}$

$\begin{pmatrix} -4 & 16 \\ 28 & -12 \end{pmatrix}$

$X = \begin{pmatrix} 3 & 4 \\ 2 & -2 \end{pmatrix}$

Calculate X^2

$\begin{pmatrix} 9 & 9 \\ 3 & 3 \end{pmatrix}$

$\begin{pmatrix} 17 & 4 \\ 2 & 12 \end{pmatrix}$

$M = \begin{pmatrix} 0 & 8 \\ 2 & 3 \end{pmatrix}$,

Work out M^{-1}

$\frac{1}{16}\begin{pmatrix} 3 & -8 \\ -2 & 0 \end{pmatrix}$

$-\frac{1}{16}\begin{pmatrix} 3 & -8 \\ -2 & 0 \end{pmatrix}$

$\begin{pmatrix} a+b & a \\ 2+b & c \end{pmatrix} = \begin{pmatrix} 4 & -2 \\ 8 & 10 \end{pmatrix}$

What is the value of b?

$b = 6$

$4a + 3b = 1$

$a + 3b = -2$

$\begin{pmatrix} 4 & 3 \\ 1 & 3 \end{pmatrix}\begin{pmatrix} a \\ b \end{pmatrix} = \begin{pmatrix} 1 \\ -2 \end{pmatrix}$

Express as simultaneous equation

$\begin{pmatrix} 0 & 14 \\ 14 & 0 \end{pmatrix}$

$\begin{pmatrix} 2 & 7 \\ 7 & 3 \end{pmatrix} - \begin{pmatrix} 2 & 7 \\ 7 & 3 \end{pmatrix} =$

Det. G = -12

$G = \begin{pmatrix} 1 & 5 \\ 3 & 3 \end{pmatrix}$

Det. G = ?

$\begin{pmatrix} 9 & 9 \\ 3 & 3 \end{pmatrix}\begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 8 \\ 10 \end{pmatrix}$

$2x + 3y = 8$

$x + 2y = 10$

Express in the form $AX = B$

$\begin{pmatrix} 2 & 3 \\ 1 & 2 \end{pmatrix}\begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 8 \\ 10 \end{pmatrix}$

r=1 and x = 3

$\begin{pmatrix} 0 & 0 \\ 0 & 0 \end{pmatrix}$

Identity Matrix $= I$

What is Matrix I?

$\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$

r=3 and x=1

$\begin{pmatrix} x+2y & q \\ 3r & y \end{pmatrix} = \begin{pmatrix} 9 & 9 \\ 3 & 3 \end{pmatrix}$

What is the value of r and x?

$\begin{pmatrix} 2 & 10 \\ 3 & 1 \end{pmatrix}$

What is the solution to:

$\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}\begin{pmatrix} 2 & 10 \\ 3 & 1 \end{pmatrix} =$

THE END