

Matrix Calculations in Microsoft Excel

Enter the following into a new sheet:

	A	B	C
1	1	3	-5
2	-12	-2	7
3	4	7	-2

Now, select cells in the square A5 to C7. Type in the formula =MINVERSE(A1:C3) and press CTRL-SHIFT-RETURN.

The cells should be filled with these decimals:

```
-0,12968 -0,08357 0,0317
0,011527 0,051873 0,152738
-0,21902 0,014409 0,097983
```

To show this is the inverse of the original matrix, select the square of cells E5 to G7, and CTRL-SHIFT-ENTER the formula =MMULT(A1:C3,A5:C7). This should give near enough the identity matrix. Some of the numbers will look like -2.77556E-17 or something. Floating point arithmetic is never perfect. They will be considered as zero.

```
1 -2,77556E-17 0
0 1 0
0 -5,89806E-17 1
```

In a similar way, to take the transpose of a matrix, use the function TRANSPOSE.

For the above example, TRANSPOSE(A1:C3) and CTRL-SHIFT-ENTER will give;

```
1 -12 4
3 -2 7
-5 7 -2
```

To find the determinant of this matrix, use MDETERM function:

=MDETERM(A1:C3) will give you the result 347 which is the determinant of the matrix in cells A1:C3