

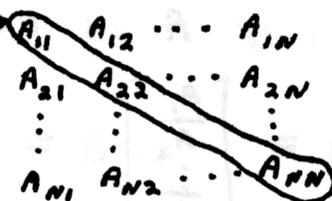
## SUMMARY OF SECTION 1.3

A MATRIX IS A RECTANGULAR ARRAY OF NUMBERS. THE NUMBERS IN THE ARRAY ARE CALLED THE ENTRIES IN THE MATRIX.

A MATRIX WITH ONLY ONE COLUMN IS CALLED A COLUMN MATRIX OR A COLUMN VECTOR, AND A MATRIX WITH ONLY ONE ROW IS CALLED A ROW MATRIX OR A ROW VECTOR.

WHEN DISCUSSING MATRICES WE WILL REFER TO NUMERICAL QUANTITIES AS SCALARS.

A MATRIX WITH  $N$  ROWS AND  $N$  COLUMNS IS CALLED A SQUARE MATRIX OF ORDER  $N$ . THE ENTRIES  $A_{11}, A_{22}, \dots, A_{NN}$  ARE SAID TO BE ON THE MAIN DIAGONAL



TWO MATRICES ARE EQUAL IF THEY HAVE THE SAME SIZE AND CORRESPONDING ENTRIES ARE EQUAL.

IF  $A$  AND  $B$  ARE MATRICES OF THE SAME SIZE, THEN  $A+B$  IS THE MATRIX OBTAINED BY ADDING CORRESPONDING ENTRIES WHILE  $A-B$  IS OBTAINED BY SUBTRACTING THE ENTRIES OF  $B$  FROM THE ENTRIES OF  $A$

IF  $A$  IS ANY MATRIX AND  $c$  IS A SCALAR, THEN  $cA$  IS THE MATRIX OBTAINED BY MULTIPLYING ALL OF THE ENTRIES OF  $A$  BY  $c$ .  $cA$  IS SAID TO BE A SCALAR MULTIPLE OF  $A$ .

IF  $A_1, A_2, \dots, A_N$  ARE MATRICES AND  $c_1, c_2, \dots, c_N$  ARE SCALARS,  $c_1 A_1 + c_2 A_2 + \dots + c_N A_N$  IS CALLED A LINEAR COMBINATION OF THEM.