Invesse of a Matrix

Let Ax = B

Anxn Xnx1 = Inxn bnx1

I + A-' exists . -A-' A x = A-' b

, In xn x = A-' b

(A/I) -> (Inxn | A-1)

- · We start from A and try to row reduce it to Inxn

 c Identity Matrix)
- Then we end up with A-1.

= 1 | 1 | 1 | 3 | -1 | Find Inverse using row reduction.

The Let Anxn be a square matrix.

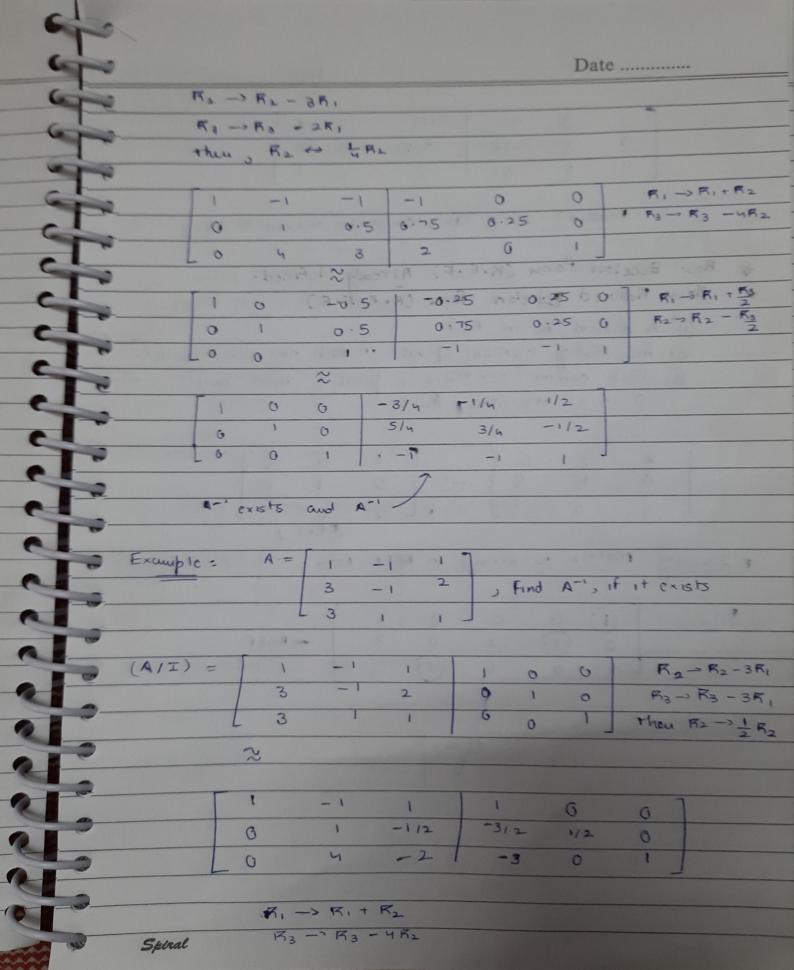
Then A' exists if rank CA) = n

-> A-' doesn't exet if rank(A) < n and det(A) = 0

508 ° -1 1 -1 0 0 0 ... 3 1 -1 0 1 0 ...

Ri - Ri

1	-1	-1	-1	0	0 7
3	1	-1	0	1	0
- 2	2	1	0	0	1 7



Date

1	0	N.	-112	112	0	1
0	1		-3/2			
10	0	0	1 3	-2	1	1

Manker) = 2 7 no cannot be reduced to Is &3

- * Row Echelon form (R.E.F) Already defined.
- * Row Reduced Echelon form (R. R. E. F)
 - O' A should be in REF
 - The leading element (pivot) in each non zoro rowist.
 - 3 Each column contains a pivot'l' must have

	2	3	< 7					4
	0	4	-	-> ^	1	6	6	
	6		2		0	1	0	
		U	. 7		F 0 4	0	31	- 4
					(KREF)		

* Identity Matrix is always in RREF form.

Ex:	1	G	0	O	1	7
	0	T	2	G	2	-> RREF
	- 6	0	6	1	3	