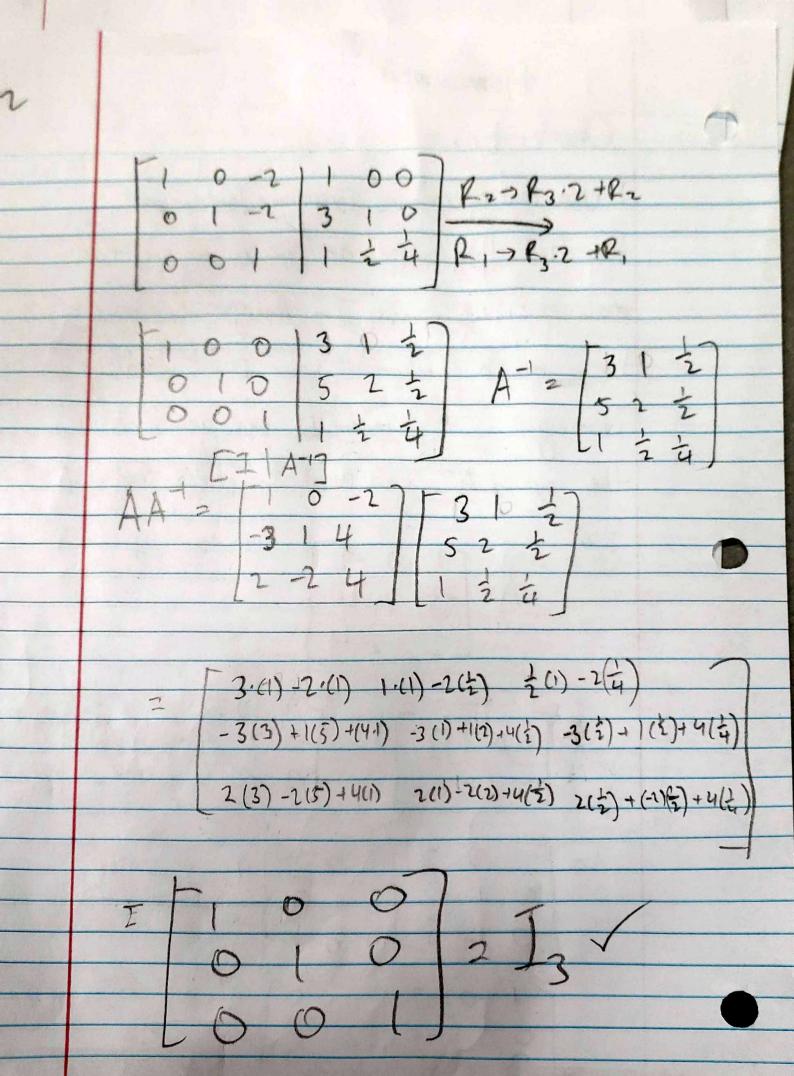
	Homework 2.2
	Charles Liu
	1. Use now operations, Gaussian-Jordan method,
	to find the inverse of the following two
	motrices if it exists. If the inverse exists,
	be sure to check that your result works.
	Nomely, if A is invertible and you find
	the inverse At, you need to check that AAT = I
-	(1) [10-2]
	A= -3 + 4
	[2-24]
	[1-7 [10-2]100 R2-7813
	$ A I = \frac{-3}{2} \cdot \frac{4}{4} \cdot \frac{0}{0} \cdot \frac{1}{2} \cdot \frac{1}{2$
	10-2 100 R3-R2-2+R3
	10-28 -1 -1
	[
-	0 1 -2 3 1 0 1 3 4 3
	[004/421]



R3->R3(-5)+R1 0 1-1 R3-> R2(2)+R, [] 0-1-720 R3-> R2(+)+R3 0 []-1-410 Inverse does not exist, REF of B does not have 3 pivots although it 13 a 3x3 marrix

2. We have a theorem that says is

A and B are invertible, then AB is also
invertible, and (AB) = B'A, Use this
result to show that if A, B, and C are
man matrices that are invertible, then

ABC is also invertible by producing a
matrix D and showing that ABC(D)=I

and O(ABC)=I, Caution: The order

you multiply the matrices is important.

(ABC) = (AB) (C) = C (AB) = C

= C-1 B-1 A-1 (AB) - B-1 A-1

So (ABC) = C-B'A-1

2 cont. (ABC)D = (ABC)CC'B'A') (P=C+B+A+) = AB (CC') B- A-1 = ABIBTAT = A(BI)BTA-1 = ABBAT = ACBB) A-1 = A IA = (AI) A+ = AH+ So (ABC) D= I where D= C+B+A+ DCABC) = C+B+A-1 (ABC) SCTBT (ATA) BC 2 C'BIJBC = C'(BIJ)BC 2 C+B-1BC = C'(B'B)C= 2 C'IC = C'(IC) = C'C=I So DCAB()=I where D=C+B+A-1

6,

