

**Quiz 5 (11 am)**

Use the following matrices for the first problem.

$$A = \begin{bmatrix} 4 & -1 & 0 \\ 2 & -1 & 4 \end{bmatrix}, \quad B = [4 \quad -2 \quad 1], \quad C = \begin{bmatrix} -3 & 7 \\ 1 & 2 \\ -1 & 4 \end{bmatrix}, \quad D = \begin{bmatrix} 3 \\ -1 \\ 2 \end{bmatrix}$$

1. Calculate each of the following or say NOT DEFINED. (2 pts. each)

(a)  $AB$

(c)  $CA$

(b)  $AC$

(d)  $BD$

2. Find the inverse of  $\begin{bmatrix} -5 & -7 \\ 1 & 4 \end{bmatrix}$ . Check your answer. (4 pts. each)

3. True/False section. (1 pt. each)

T/F If  $AB = AC$  and  $A$  is invertible, then  $B = C$ .

T/F If  $AB = 0$  and  $B$  is invertible, then  $A = 0$ .

T/F If  $AB = 0$  and  $B \neq 0$ , then  $A \neq 0$ .

T/F If  $AB = BA$ , then  $A = B$ .