

1) In the homework due today, did you use something similar to the following critical analysis/reasoning?

Multiply both sides of an equation by the inverse of a matrix

Reorder parenthesis by associativity to pair a matrix with its inverse

Cancel A by its inverse: $A^{-1}A = I_{n \times n}$ or $A^{-1}A = I_{n \times n}$

Identity reduces

- a) Yes and I used it more than once
- b) Yes and I used it once
- c) No, although I used some of this reasoning
- d) No, I didn't use anything like it
- e) What homework?

2) If A is an invertible $n \times n$ matrix, and \vec{x} and \vec{b} are $n \times 1$ vectors, then the matrix-vector equation $A\vec{x} = \vec{b}$ has a unique solution

- a) True and I can tell you what the solution is
- b) True but I am unsure what the solution is
- c) Always false
- d) False but sometimes true (and sometimes false)

- 3) If $A\vec{x} = \vec{0}$, then is $C(A\vec{x}) = \vec{0}C$?
- a) Yes and I have a good reason why
 - b) Yes but I am unsure of why
 - c) No but I am unsure of why not
 - d) No and I have a good reason why not

4) If A is an invertible $n \times n$ matrix, with $n > 1$, and \vec{x} and \vec{b} are $1 \times n$ vectors, then the matrix-vector equation $A\vec{x} = \vec{b}$ has a unique solution

- a) True and I can tell you what the solution is
- b) True but I am unsure what the solution is
- c) Always false
- d) False but sometimes true (and sometimes false)

- 5) If A is *not* invertible and $AB = AC$, must $B = C$?
- a) Yes and I have a good reason why
 - b) Yes but I am unsure of why
 - c) No but I am unsure of why not
 - d) No and I have a counterexample

Solutions

1. a)
2. a)
3. d)
4. c)
5. d)