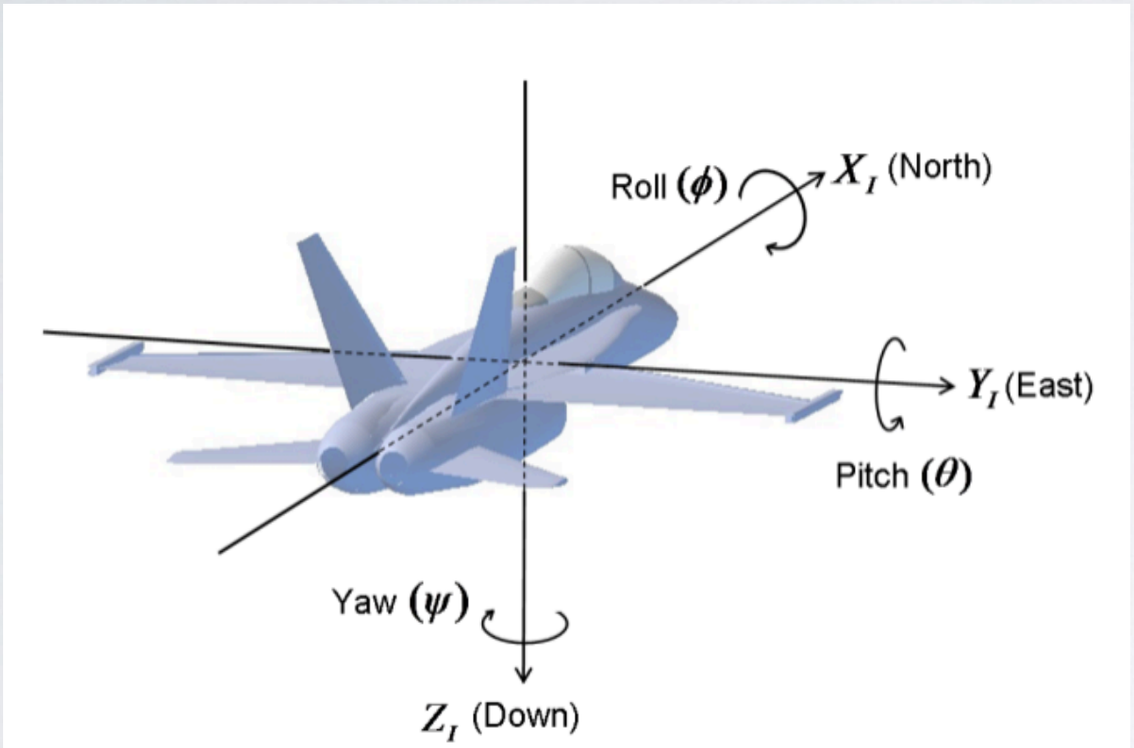
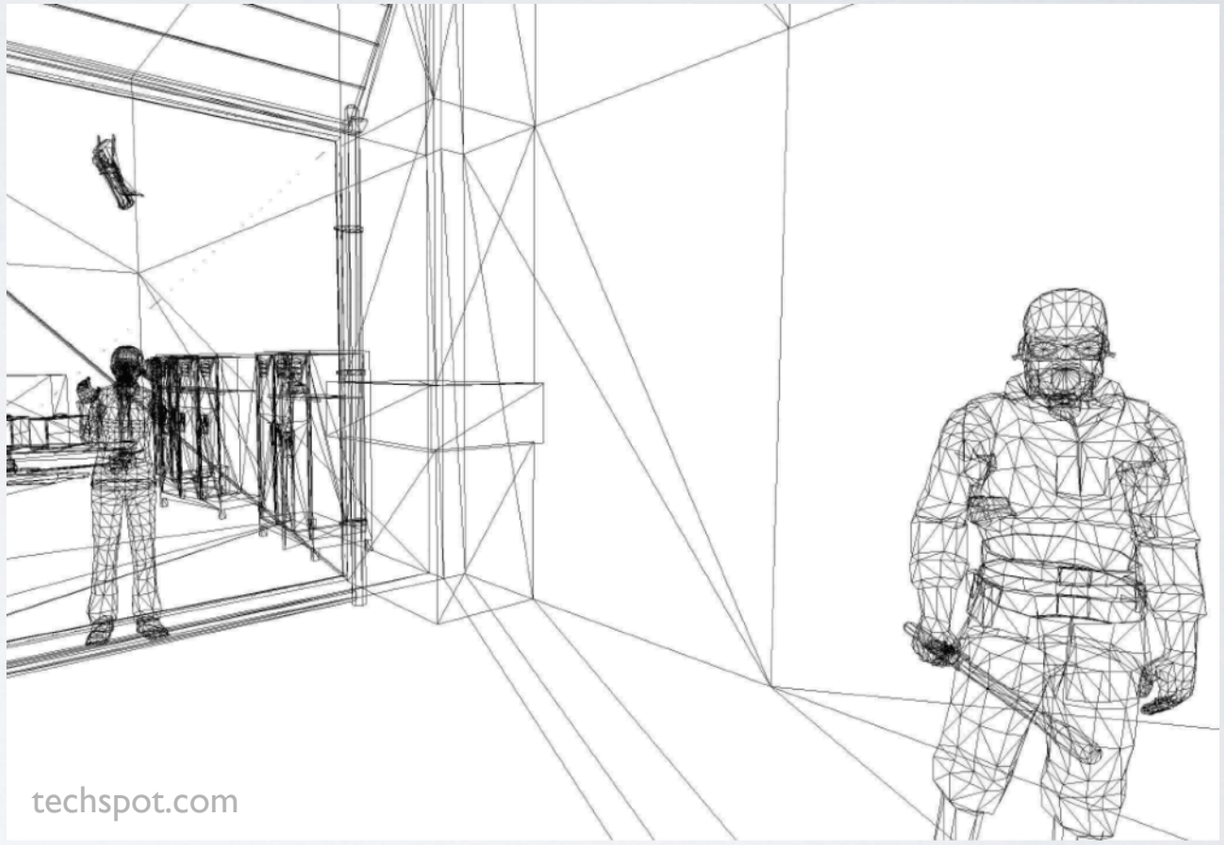
Week 3 - #1

Linear Algebra (II)



Sean Morrison



techspot.com

Today: Ch 3

Next Class: Ch 3

Ji-hoon Kim (Seoul National University)

Rudimentary Mathematical Methods of Physics (Fall 2025): Quiz #4

— [open book and open note, but no cellphone or laptop, drop it off as you leave the class] —

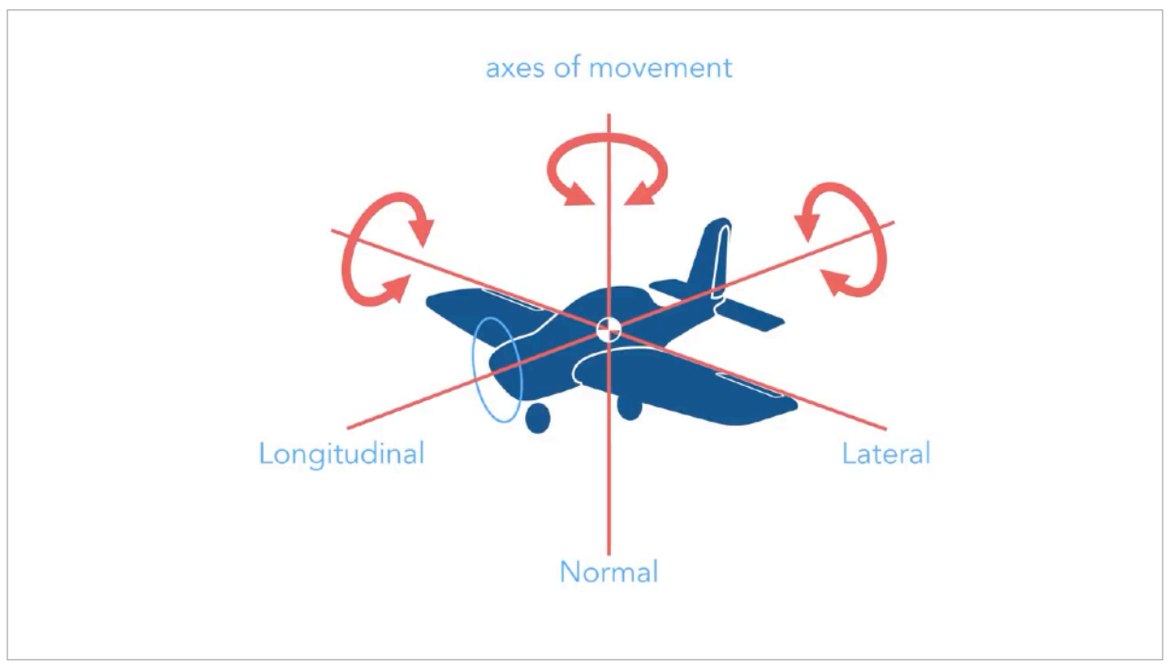
Please write down your name and student ID in the top right corner. (0.0 pt: no paper found with your name / 0.5 pt: paper found with your name and some answers / 1.0 pt: good answers)

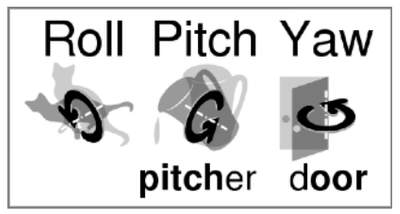
1. Boas, Chapter 3, Section 2, Problem 12; then, Section 2, Example 2 (p.86)

2. In a 2-dimensional space, you need one angle to represent/define a rotation. In 3-dimensional space, how many angles do you need to represent/define a "rotation"?

3. For what c value(s) does the set of equations below have roots other than the trivial $(x, y) = (0, 0)$?

$$(1 - c)\, x + 3\, y = 0, \quad 4\, x + (2 - c)\, y = 0$$





www.youtube.com/watch?v=5IkPWZjUQIw

Rudimentary Mathematical Methods of Physics (Fall 2025): Suggested Problems in Chapter 3, Boas, 3rd ed.

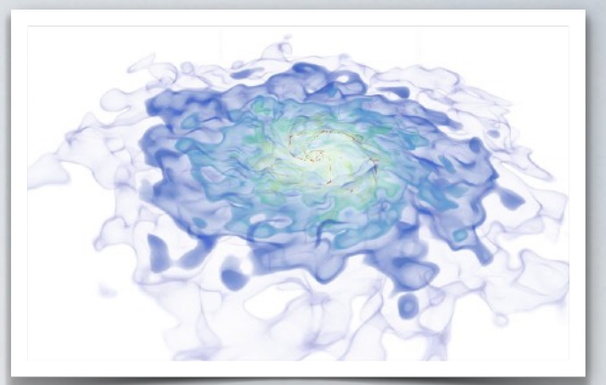
The problems I suggest you to take a deeper look into include, but are not limited to, the following. The class homework assignments will mainly be from this list.

- Section 02: Problems 8, 13, 14, 17, 18
- Section 03: Problems 2, 6, 9, 10, 13, 15
- Section 04: Problems 5, 6, 9, 21, 23
- Section 05: Problems 17, 21, 32, 36, 42
- Section 06: Problems 6, 7, 16, 18, 21, 29, 30
- Section 07: Problems 12, 27, 31, 34, 35
- Section 08: Problems 2, 10, 15, 16, 17, 24
- Section 09: Problems 3, 5, 10, 17, 19(c), 24, 25(a)(b)
- Section 10: Problems 4(c), 5(a), 7
- Section 11: Problems 9, 10, 19, 21, 31, 33, 42, 44, 50, 57, 60, 61
- Section 12: Problems 9 (for Problems 4, 7), 16, 21
- Section 13: Problems 1, 4, 7
- Section 14: Problems 13

<u>Chapter 10, Sections 1-4</u>

- Section 02: Problems 6
- Section 03: Problems 1, 2, 8
- Section 04: Problems 2, 6, 8

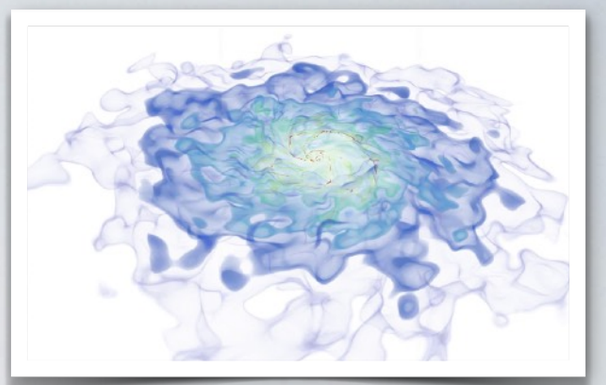
64 problems / 399 total



HW #1 has been posted!

(Posted on jihoonkim.org, Due: Sep. 19 (Fri), 23:00pm,

Grader TA this time: 정은우, cewgenius@snu.ac.kr)



Geometrical Meaning of Determinants

Rudimentary Mathematical Methods of Physics (Fall 2025): Quiz #3

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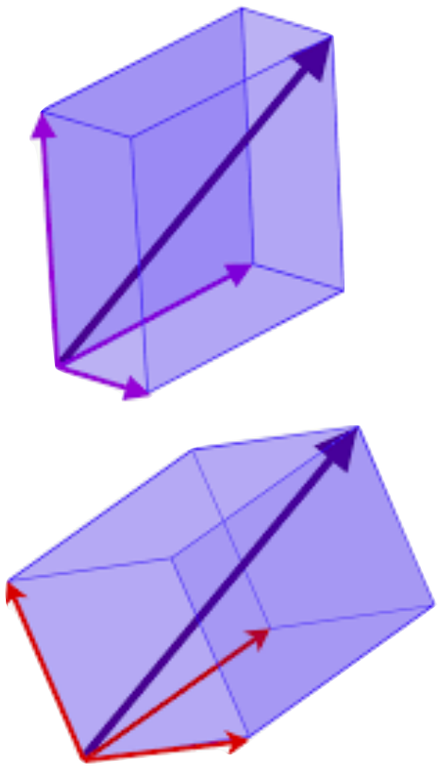
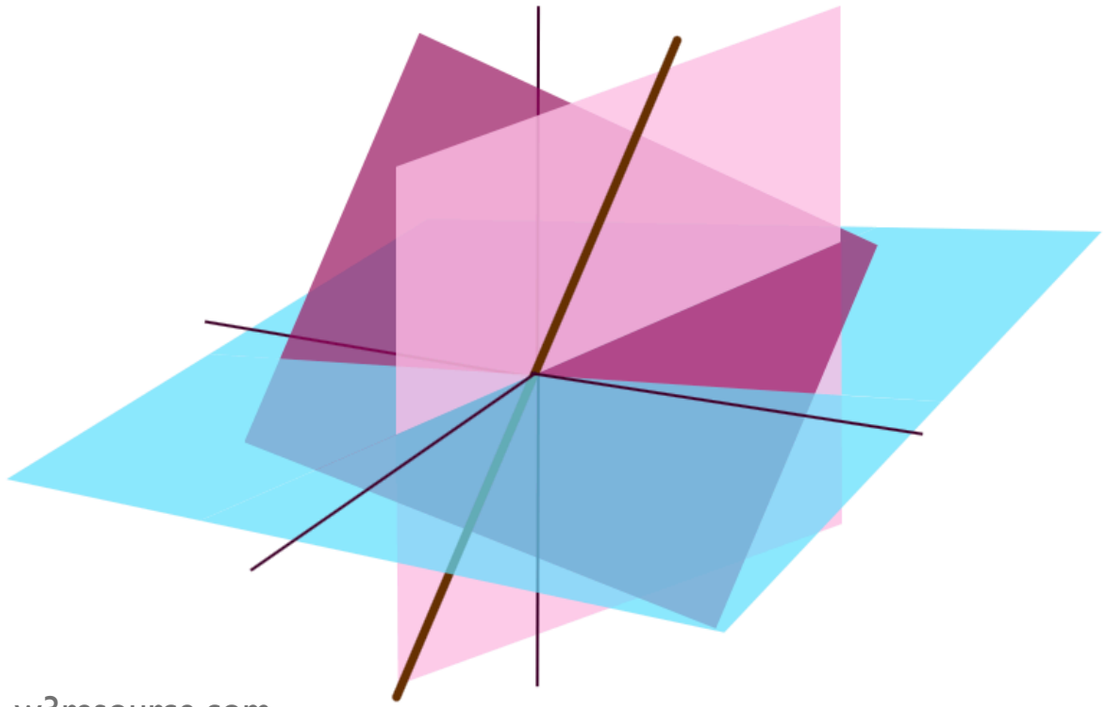
1. Boas, Chapter 2, Section 11, Problem 11, using Eq.(11.3)

2. Refresh your memory about the "determinant" of a matrix and how to find it — from what you learned in your freshman Calculus. Then, Boas, Chapter 3, Section 3, Problem 1





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