

PHYS:4761 Homework #3

Reading: Read Arfken, Weber, & Harris, Chapter 3, Sections 3.1–3.9 (p.123–181)

Due at the beginning of class, Thursday, September 14, 2023.

Homework Problems:

1. (5 pts) Chapter 2, Exercise 2.2.2
2. (5 pts) Chapter 2, Exercise 2.2.15
3. (10 pts) Chapter 2, Exercise 2.2.17
4. (10 pts) Chapter 2, Exercise 2.2.23
5. (5 pts) Chapter 2, Exercise 2.2.26
6. (5 pts) Chapter 2, Exercise 2.2.35
7. (5 pts) Chapter 2, Exercise 2.2.51
8. (10 pts) Chapter 3, Exercise 3.2.4
9. (10 pts) Chapter 3, Exercise 3.2.7
10. (10 pts) Chapter 3, Exercise 3.2.8
11. (10 pts) Chapter 3, Exercise 3.3.1
12. (5 pts) Chapter 3, Exercise 3.3.3
13. (10 pts) Chapter 3, Exercise 3.4.2

HINT: Note the the original (unrotated) coordinate system has

$$\hat{\mathbf{e}}_1 = 90^\circ \text{W}$$

$$\hat{\mathbf{e}}_2 = 0^\circ \text{W}$$

$$\hat{\mathbf{e}}_3 = 90^\circ \text{N}$$