

# PHYS:4761 Homework #10

Reading: Read Arfken, Weber, & Harris, Chapter 9, Sections 9.4–9.8 (p. 414–445)

Due at the beginning of class, Thursday, November 12, 2015.

Homework Problems:

1. Chapter 9, Exercise 9.3.1
2. Chapter 9, Exercise 9.4.2
3. Chapter 9, Exercise 9.4.6

NOTE: Take the operator to be

$$\mathbf{L}^2 = -\frac{1}{\sin\theta} \frac{\partial}{\partial\theta} \left( \sin\theta \frac{\partial}{\partial\theta} \right) - \frac{1}{\sin^2\theta} \frac{\partial^2}{\partial\phi^2}$$

4. Chapter 9, Exercise 9.4.7
5. Chapter 9, Exercise 9.6.1
6. Chapter 9, Exercise 9.6.4
7. Chapter 9, Exercise 9.7.1