

# ASTRONOMY 020

Problem Set #14

Due: January 30, 2004

1. A binary system consists of two stars with a brightness ratio of 3; however, we see them unresolved as a point source of magnitude +4.0. What is the magnitude of each star?
2. Zeilik & Gregory, Chapter 11, problem 8.
3. Zeilik & Gregory, Chapter 11, problem 16.

Practice Problems:

1. Zeilik & Gregory, Chapter 11, problem 2.  
Answer:  $\Delta m = 1.5$ .
2. Zeilik & Gregory, Chapter 11, problem 3.  
Answer:  $m = 2.63$ .
3. Zeilik & Gregory, Chapter 11, problem 4.  
Answers: (a)  $m - M = -2.4$ , (b)  $M = +2.0$ .
4. Zeilik & Gregory, Chapter 11, problem 5.  
Answer:  $d = 1000$  pc.