Physics 1311 Spring 2020 Homework/Study 4 Two-sided)

Chapter 3 1. What is the primary function of an astronomical telescope?

- 2. An astronomer has use of a 1.4 meter telescope. He finds out that a new project requires 50 times more light gathering power than the 1.4m telescope. What diameter (minimum) telescope will he need?
- 3. Why do astronomers build new observatories on mountains in Chile?
- 4. Why do modern astronomers not look through their telescopes, but rather use instruments?
- 5. What problem of a glass lens is completely avoided by using a mirror to gather the light?
- 6. A backyard astronomer has a refracting telescope. The objective lens has a focal length of 1500mm. If he wants a magnification of 125 times, what focal length does he need in his eye lens?

7. What are the ways the atmosphere affects astronomical observations?

- 8. Why can radio telescopes observe some areas of the universe that optical telescopes cannot see?
- 9. What property of a telescope is known as "resolution?"
- 10. What causes problems with ultraviolet observations, even from mountaintops? What is the solution?