

"HW Check" @ bell
"Quiz"

Solar observations, etc. on roof

-walking only

-stay 10 ft away from all edges

*-no conversation w/
people on ground*



REVIEW AND DISCUSSION

1. **L01** List three advantages of reflecting telescopes over refracting telescopes.
2. **L02** What are the largest optical telescopes in use today? Why do astronomers want their telescopes to be as large as possible?

3. One of the primary advantages of CCDs over photographic plates is the former's high efficiency in detecting light. (T/F)
8. The main reason that most professional research telescopes are reflectors is that (a) mirrors produce sharper images than lenses do; (b) their images are inverted; (c) they do not suffer from the effects of seeing; (d) large mirrors are easier to build than large lenses.
9. If telescope mirrors could be made in odd sizes, the one with the *most* light-gathering power would be (a) a triangle with 1-m sides; (b) a square with 1-m sides; (c) a circle 1 m in diameter; (d) a rectangle with two 1-m sides and two 2-m sides.

Chapter 3

True or False?/Multiple Choice 1) F 2) F 3) T 4) T 5) F 6) F 7) F 8) d 9) d 10) c 11) a 12) d 13) b 14) b 15) c

Problems 1) 0.3 arc seconds; 6.8 pixels 2) 580 μm ; longer than the 3 – 200 μm operating range 3) 6.7 minutes; 1.7 minutes 4) (a) 0.25", (b) 0.01" 5) 15 m 6) 160 light-years, using the formula in the text to compute the resolution 7) 3.3 minutes 8) (a) 36, (b) 0.61, (c) 0.012 light-years 9) 14.1 m, 16 m 10) (a) 0.003 arc seconds, (b) 0.005 arc seconds

3. ■ A 2-m telescope can collect a given amount of light in 1 hour. Under the same observing conditions, how much time would be required for a 6-m telescope to perform the same task? A 12-m telescope?

6.7 minutes, and 1.7 minutes

9. ■ What would be the equivalent single-mirror diameter of a telescope constructed from two separate 10-m mirrors? Four separate 8-m mirrors?

14.1 m, 16 m