## Answers for Lesson 8-5, pp. 447–449  Exercises

1. ∠ of elevation from sub to boat

2. ∠ of depression from boat to sub

3. ∠ of elevation from boat to lighthouse

4. ∠ of depression from lighthouse to boat

5. ∠ of elevation from Jim to top of waterfall

6. ∠ of elevation from Kelley to top of waterfall

7. ∠ of depression from top of waterfall to Jim

8. ∠ of depression from top of waterfall to Kelley

9. 34.2 ft

10. 502.4 m

11. about 986 m

12. 263.3 yd

13. 0.6 km

14. 769 ft

15. 64°

16. 4.8°

17. about 193 m

18. 3300 m

19. 72, 72

20. 46, 46

21. 27, 27

22. 20, 20

23. B

24. **a.** Length of any guy wire = dist. on the ground from tower to the guy wire div. by the cosine of the ∠ formed by the guy wire and the ground.

  **b.** Height of attachment = dist. on the ground from tower to the guy wire times the tangent of the ∠ formed by the guy wire and the ground.

**25.** 5

**26.** about 2.8

**27.** 0.5; about 84.9

**28.** 370 m

**29.** about 28 ft

**30.** Check students' work.