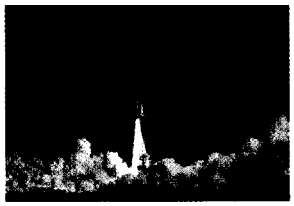
Handout Math 48C Mitchell Schoenbrun
Solving Triangles

30. Space Shuttle Launch Suppose you are 4000 feet away from the launch pad of the Space Shuttle. You are told that 7 seconds after liftoff, the Space Shuttle is 530 feet above the ground.



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a. What is the measure of the angle of elevation from you to the Space Shuttle?

b. What is the average rate of change of the measure of the angle of elevation between liftoff (0 seconds) and 7 seconds?

c. Do you think that the rate of change of the measure of the angle of elevation later in the flight of the shuttle will be faster or slower than the result in part (b)? Explain your answer.

43. Parasailor A parasailor is tethered to a boat with a 110-foot cable and is 74 feet above the point of attachment.

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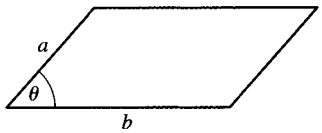
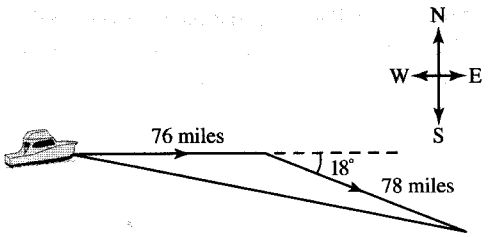
a. What is the measure of the angle of depression from the parasailor to the boat?

b. How far, horizontally, is the parasailor from the boat?

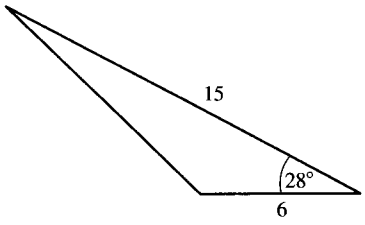
49. Describe how right triangle trigonometry can be used to find the area of a parallelogram.



28. Ship at Sea A ship travels 76 miles due east, then adjusts its course 18° southward. After traveling 78 miles, how far is the ship from where it began?



44. Solve the following oblique triangle using right triangle trigonometry and not the Law of Cosines.



In Exercises 27–32, two sides and an angle are given. Determine whether the given information results in one triangle, two triangles, or no triangle at all. Find the missing values of all sides and angles for the triangles that result.

27. $a = 3, b = 2, A = 50°$

29. $b = 4, c = 6, B = 20°$

31. $a = 2, c = 1, C = 25°$

47. Solve the following oblique triangle using right triangle trigonometry and not the Law of Sines.