Solve ABC.

1. α = 60°, b = 20, c = 30 2. β = 150°, a = 150, c = 30

3. α = 23°40', c = 4.30, b = 70.0 4. a = 25.0, b = 80.0, c = 60.0

5. γ = 45°, b = 10.0, a = 15.0 6. a= 20.0, c = 10.0, b = 20.0

7. The angle at one corner of a triangular plot of ground is 73°40', and the sides that meet at this corner are 175 feet and 150 feet long. Approximate the length of the third side.

8. Two automobiles leave a city at the same time and travel along straight highways that differ in direction by 84°. If their speeds are 60 mi/hr and 45 mi/hr, respectively, approximately how far apart are the cars at the end of 20 minutes?

9. A ship leaves port at 1:00 p.m. and travels S35°E at the rate of 24 mi/hr. Another ship leaves the same port at 1:30 p.m. and travels S20°W at 18 mi/hr. Approximately how far apart are the ships at 3:00 p.m.?

10. A jogger runs at a constant speed of one mile every 8 minutes in the direction S40°E for 20 minutes and then in the direction N20°E for the next 16 minutes. Approximate, to the nearest tenth of a mile, the straight line distance from the endpoint to the starting point of the jogger's course.

**Approximate the area of ABC.**

11. α = 80.1°, a = 8.0, b = 3.4 12. a = 25.0, b = 80.0, c = 60.0

13. A triangular field has sides of lengths a = 115 yd, b = 140 yd, c = 200 yd. Approximate the number of acres in the field. (1 acre = 4840 yd2)

14. Approximate the area of a parallelogram that has sides of lengths a = 12.0 ft, b = 16.0 ft if one angle at a vertex has measure θ = 40°.