Section 7.1

Oblique Triangles and the Law of Sines

Congruency

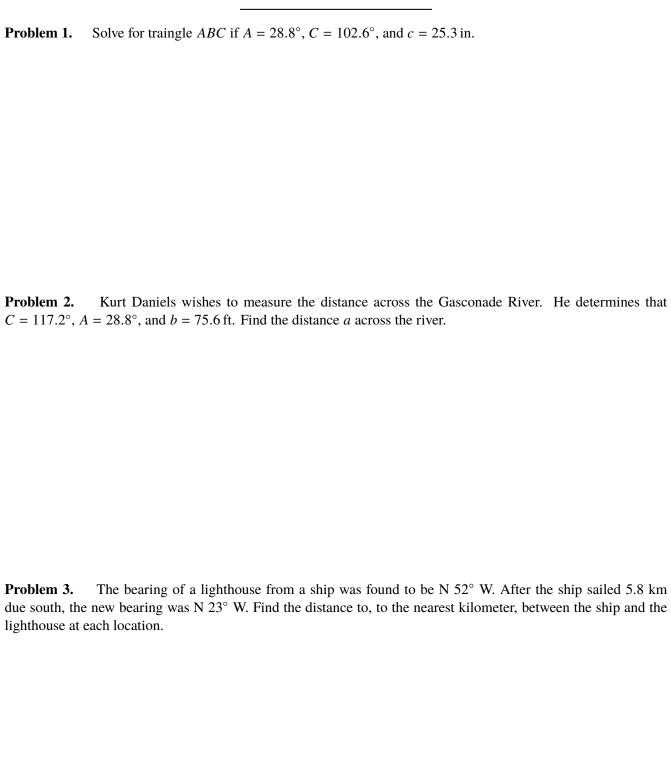
Congruence Axioms	
SAS Side-Angle-Side	If two sides and the included angle of one triangleare equal to two sides and the included angle of another triangle, then the triangles are congruent.
ASA Angle-Side-Angle	If two angles and the included side of one trangle are equal to two angles and the included side of a secondtriangle, then the triangles are congruent.
SSS Side-Side-Side	If three sides of one triangle are equal to three sides of a second triangle, then the triangles are congruent.

In this section we will learn how to solve *oblique* triangles. An oblique triangle is a triangle that is *not* a right triangle. With right triangles given any 2 pieces of information (not *both* angles) then we can find all other possible sides and angles. We would like to be able to do the same with oblique triangles.

Law of Sines

$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$$

Law of Sines Problems



Area of a Triangle

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The area of a triangle ABC is given by any one of the following formulas:

Area =
$$\frac{1}{2}bc \sin A$$
, Area = $\frac{1}{2}ab \sin C$, and Area = $\frac{1}{2}ac \sin B$

Problem 4. Find the area of a triangle *DEF* where f = 9.0 ft, d = 12 ft and $E = 127^{\circ}$.

Problem 5. Find the area of a triangle ABC if $B = 58^{\circ} 10'$, a = 32.5 cm, and $C = 73^{\circ} 30'$.