

Find the area of the triangle having the indicated sides and angles. Round to the nearest tenth.

7.  $b=22, a=32, \angle C=128^\circ$   $A = \frac{1}{2}absinC = \frac{1}{2}(22)(32)sin128$

$277.4 \text{ u}^2 \text{ (units}^2\text{)}$

8.  $b=18, c=22, \angle A=128^\circ$   $A = \frac{1}{2}bc sinA = \frac{1}{2}(18)(22)sin128$

$156.03 \text{ u}^2$

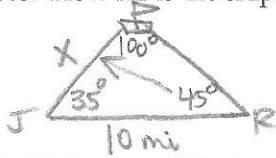
9.  $a=150 \text{ feet}, b=210 \text{ feet}, c=190 \text{ feet}$   
 $S = \frac{1}{2}(150+210+190) = 275$

$13,781.2 \text{ u}^2$

$A = \sqrt{275(125)(65)(45)}$

Draw a picture and solve.

10. Juan and Rebekah are standing at the seashore 10 miles apart. The coastline is a straight line between them. Both can see the same ship in the water. The angle between the coastline and the line between the ship and Juan is 35 degrees. The angle between the coastline and the line between the ship and Romelia is 45 degrees. How far is the ship from Juan?

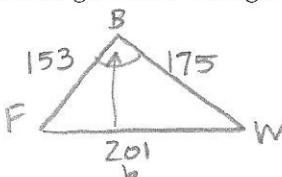


$\frac{sin 45}{x} = \frac{sin 100}{10}$   
 $\frac{10 sin 45}{sin 100} = \frac{x sin 100}{sin 100}$

$7.2 = x$

7.2 miles

11. Fred, Barney and Wilma are camping in their tents. If the distance between Fred and Barney is 153 feet, the distance between Fred and Wilma is 201 feet, and the distance between Barney and Wilma is 175 feet, find each angle of the triangle formed.



Find B first - largest angle

$201^2 = 153^2 + 175^2 - 2(153)(175)cos B$

$40401 = 54,034 - 53,550 cos B$

$\frac{-13633}{-53,550} = \frac{-53,550 cos B}{-53,550}$   $.255 = cos B$   
 $cos^{-1}(.255) = B$

$\frac{sin 75.3}{201} = \frac{sin F}{175}$

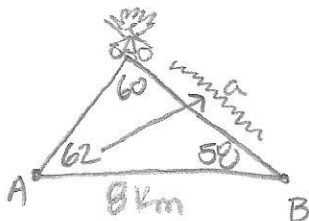
$B = 75.3$

$F = 57.4$

$W = 47.3$

12. Two rangers, one at Station A and one at Station B, observe a fire in the forest. The angle at Station A formed by the lines of sight to Station B and to the fire is  $62^\circ$ . The angle at Station B formed by the lines of sight to Station A and to the fire is  $58^\circ$ . The stations are 8 km apart.

a. How far from Station B is the fire?  $8.2 \text{ miles km}$



$\frac{sin 62}{a} = \frac{sin 60}{8}$

$\frac{8 sin 62}{sin 60} = \frac{a sin 60}{sin 60}$

$8.2 = a$