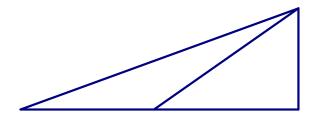
What I will give you: Area of triangle: Area = $\frac{1}{2}$ bcsin A and Heron's formula for the area of a triangle: Area = $\sqrt{s(s-a)(s-b)(s-c)}$ where $s = \frac{a+b+c}{2}$

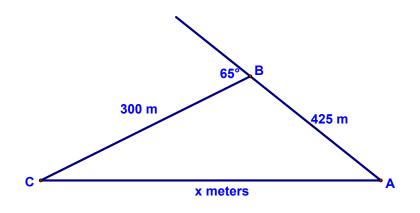
What you need to memorize: Law of Sines – used with AAS, ASA, and SSA: $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$ and Law of Cosines – used with SAS & SSS $c^2 = a^2 + b^2 - 2abcosC$

1. From a certain distance, the angle of elevation to the top of a building is 20°. At a point 40 meters closer to the building, the angle of elevation is 35°. Approximate the height of the building to three decimals.



Sections 6.1 & 6.2 Word Problems

2. To approximate the length of a marsh, a surveyor walks 425 meters from point A to point B. Then the surveyor turns 65° and walks 300 meters to point C. Approximate the length AC of the marsh:

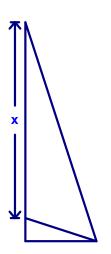


3. A ski jump that is 17 feet long rises at an angle of 10.4° from the horizontal. New regulations indicate that the jump is too dangerous, so the angle is lessened to 7.5° and the ramp is lengthened.

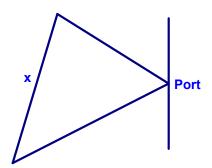
How much longer is the new ramp?

Sections 6.1 & 6.2 Word Problems

4. Charlotte is flying a kite such that the kite is up a hill from where she is standing. The angle of elevation of the kite is 72° and the length of the string is 68 ft. If the slope of the hill is 18°, find the height of the kite (x) relative to the ground on the hill.



5. Two ships leave port at 9am. One ship travels at a bearing of N 58° W at 10 knots and the other travels at a bearing of S 63° W at 16 knots. How far apart are the ships at 11am?



Sections 6.1 & 6.2 Word Problems

6. From a certain distance, the angle of elevation to the top of a building is 17°. At a point 50 meters closer to the building, the angle of elevation is 31°. Approximate the height of the building using the law of sine (rather than just right triangle trig).