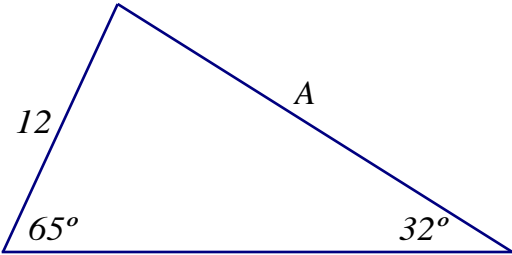
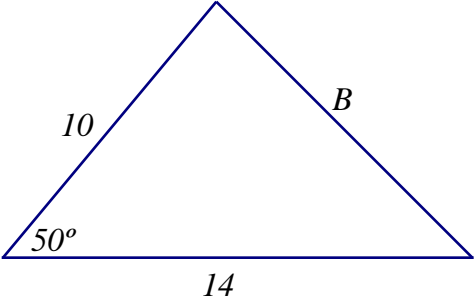
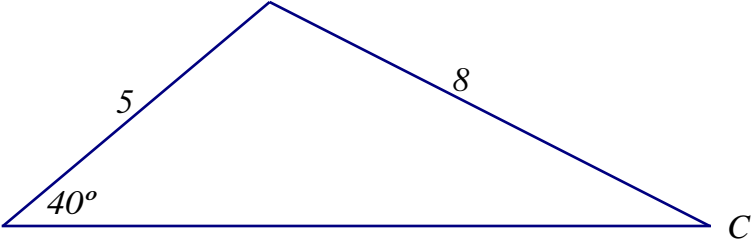


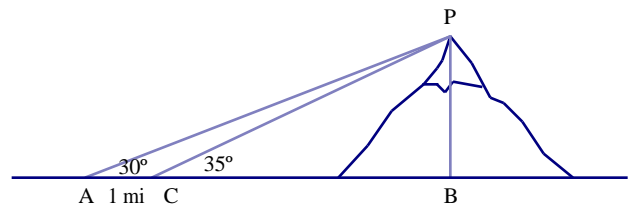
You can only use the three trig functions sine, cosine and tangent in right triangles. Nevertheless you can find the parts of ANY triangle (if you have enough information) by drawing perpendiculars and breaking it into to right triangles. Here are three problems that show this.

1. Find A.	 <p>A scalene triangle with a left side of length 12, a bottom-left angle of 65°, and a bottom-right angle of 32°. The right side is labeled A.</p>
2. Find B.	 <p>A scalene triangle with a left side of length 10, a bottom-left angle of 50°, and a bottom side of length 14. The right side is labeled B.</p>
3. Find $\angle C$.	 <p>A scalene triangle with a left side of length 5, a right side of length 8, and a bottom-left angle of 40°. The bottom-right angle is labeled C.</p>

4. So how did surveyors find the height of Mt. Everest? They couldn't get close because of other mountains in the way so they didn't know how far they were from the mountain when they measured the angle.

They made two measurements from different positions and never had to get close to the mountain itself. Find the height PB of this mountain using the angles obtained from looking at the mountain from two positions A and C one mile apart.

Hint: For each triangle write the tangent equation and solve two equations in two unknowns.



5. Two buildings are 200 feet apart across a street. A sunbather at point P finds the angle of elevation of the roof of the taller building to be 25° and the angle of depression of its base to be 30° . Find the height of the taller building to the nearest foot.

