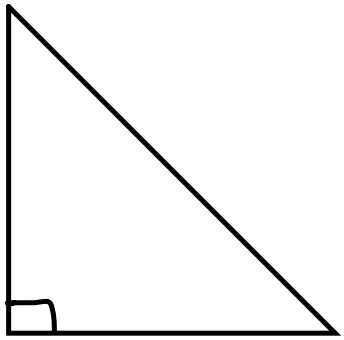
We have found several methods for finding missing measures of triangles

1. For a **right** triangle, we use

2. For triangles where we are given an **angle and its opposite side** measure plus another measure we use:

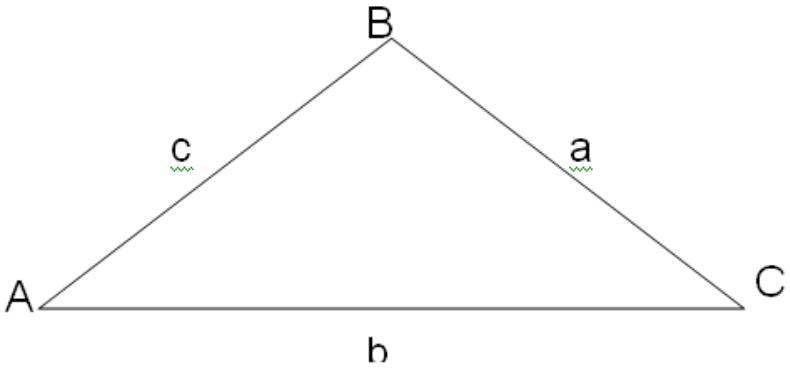
3. What if we cannot use these methods?



Given the measures of 2 sides and the included angle how can we solve the triangle?

$C = 73^{\circ}, a = 7, b = 10$

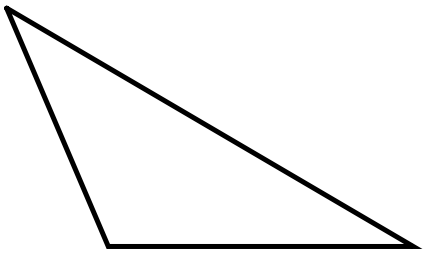
$\angle B = 67$

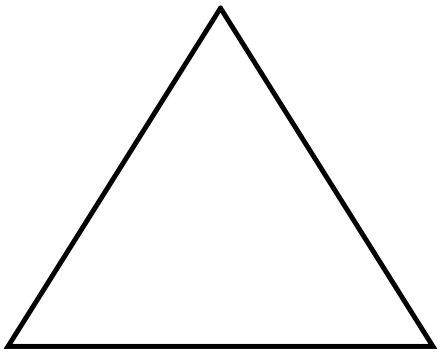


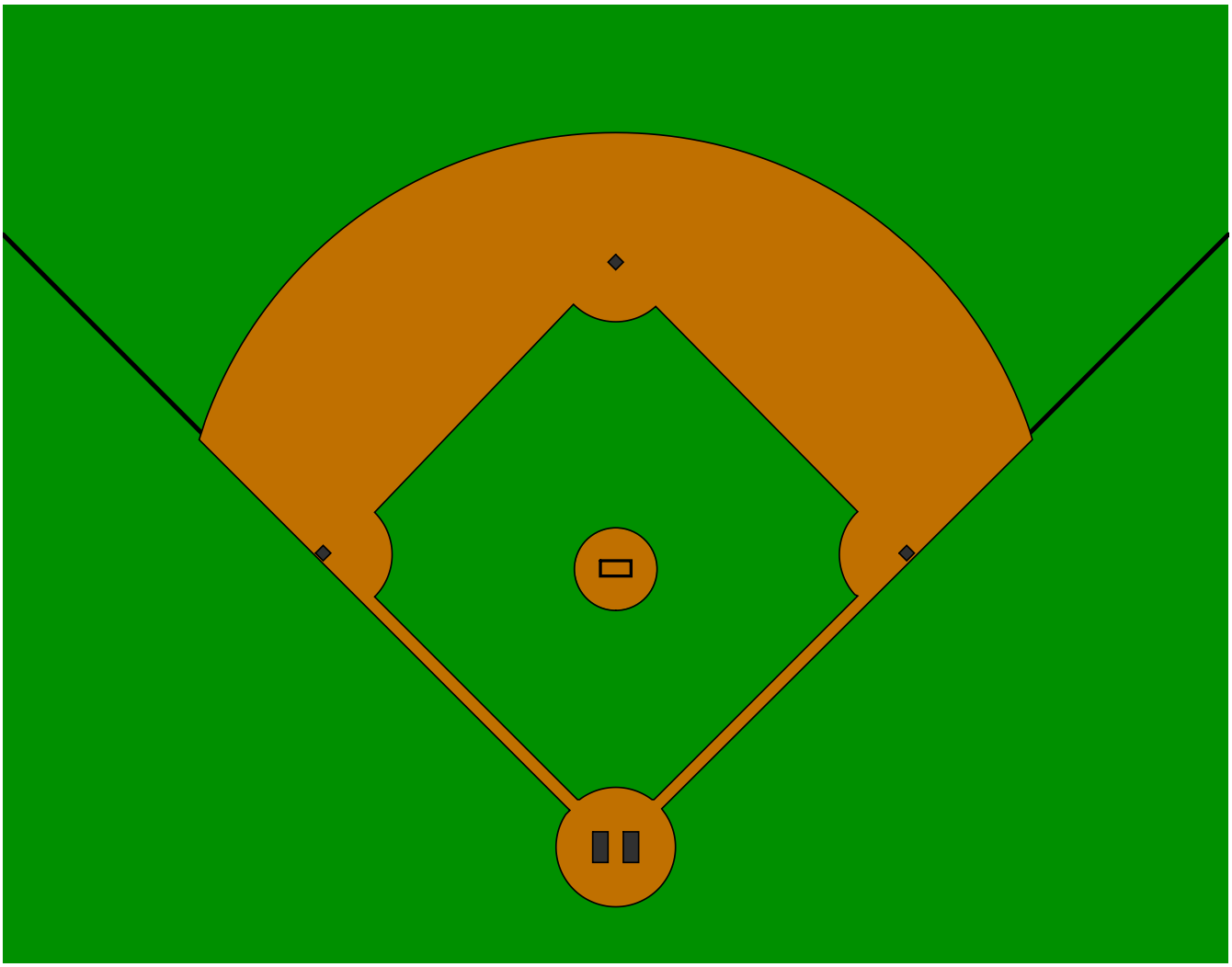
Law of Cosines: use when no angle and opposite side measures are known.

$$a^2 = b^2 + c^2 - 2bc\cos A$$

Solve $\triangle ABC$







In Australian baseball, the bases lie at the vertices of a square 27.5 m on a side and the pitcher's mound is 18m from home plate.

a) Find the distance from the pitcher's mound to first base.

b) Find the angle between home plate, the pitcher's mound, and first base.