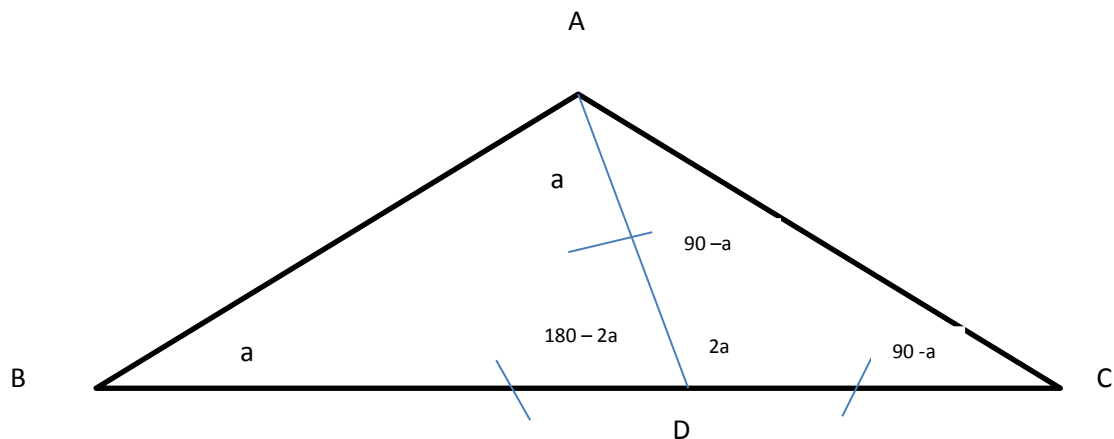


Find angle BAC



In this triangle, it is stated that $AD=BD=CD$. Therefore, triangle BAD and DAC are both isosceles triangles.

This means that In triangle BAD, angles DBA and BAD are equal; we call each angle a . Therefore, the third angle in triangle BAD is angle BDA, which is $180 -$ the sum of the two angles,

$$=180 - 2a.$$

Proceeding onto the 'next' triangle, CDA, we can find angle CDA first. This is $180 -$ the angle BDA.

$$=180 - (180 - 2a)$$

$$=2a$$

Since triangle DAC is an isosceles, angles DAC and DCA are equal. $180 - 2a$ gives the sum of the two angles. So to find one of the angles, we can just half $180-2a$,

$$= (180 - 2a)/2$$

$$=90 - a$$

The question asked to find the angle BAC, so this is angle BAD + angle DAC.

$$=a + 90 - a$$

$$\underline{\text{Angle BAC} = 90}$$