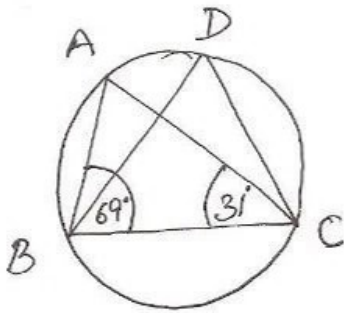


④

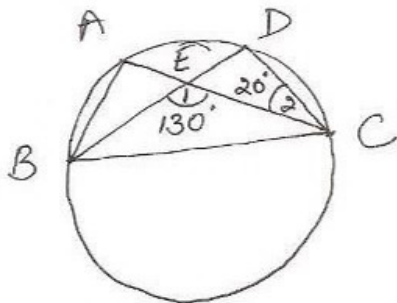


to find  $\angle BDC$

Sol In  $\triangle ABC$   
 $\angle A + \angle ABC + \angle ACB = 180^\circ$   
 $\angle A + 69^\circ + 31^\circ = 180^\circ$   
 $\Rightarrow \angle A = 180^\circ - 100^\circ$   
 $= 80^\circ$

$\angle BDC = \angle A = 80^\circ$   
 [angles in same segment]

⑤



to find  $\angle BAC$

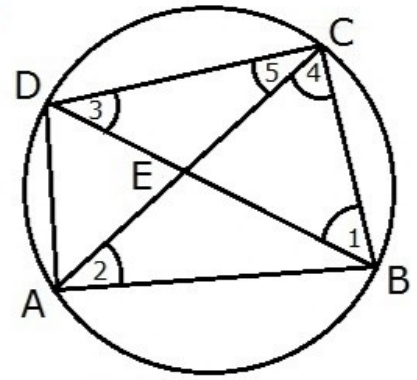
Solution

$\angle C = \angle B + \angle D$  (exterior  $\angle$  prop. of  $\triangle$ )

$130^\circ = 20^\circ + \angle D$   
 $\Rightarrow \angle D = 130^\circ - 20^\circ$   
 $= 110^\circ$

$\angle D = \angle A = 110^\circ$  (angles in same segment)  
 $\therefore \angle BAC = 110^\circ$

⑥



to find  $\angle BDC$   
 $\angle ECD$

Sol.

$\angle 3 = \angle 2 = 30^\circ$  (angles in same segment)

In  $\triangle BCD$   
 $\angle 1 + \angle 3 + \angle BCD = 180^\circ$   
 $70^\circ + 30^\circ + \angle BCD = 180^\circ$   
 $\Rightarrow \angle BCD = 180^\circ - 100^\circ$   
 $= 80^\circ$

In  $\triangle BAC$   
 $AB = BC$   
 $\Rightarrow \angle 4 = \angle 2 = 30^\circ$

$\angle BCD = \angle 4 + \angle 5$   
 $80^\circ = 30^\circ + \angle 5$   
 $\Rightarrow \angle 5 = 80^\circ - 30^\circ$   
 $\angle ECD = 50^\circ$