Online Class – X – 21   **09 / 08 / 2021**
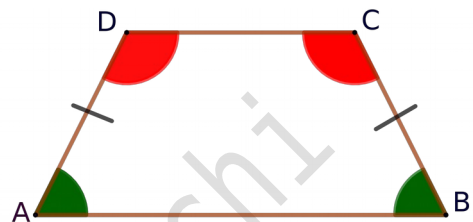
2 . Circles – Class 9

To view class ➤ ▶

Assignment Answer

Since ABCD is an isosceles trapezium
 AD = BC and also
AB is parallel to DC .

We have to prove ∠ A+ ∠ C = 180° & ∠ B + ∠ D =180°

  Since ABCD is an isosceles trapezium,

∠ A = ∠ B   . . . . (1)

Since AB // DC

∠ A + ∠ D = 180°   . . . . (2)   (Co-interior angles are
supplementary)

 From (1) & (2) we have

∠ B + ∠ D = 180°
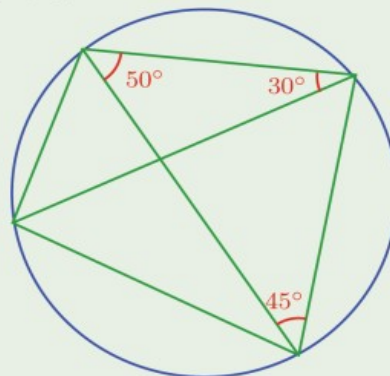
Also, ∠ A + ∠ C = 180°

Since the opposite angles are supplementary , ABCD is cyclic.

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Q1)

Calculate the angles of the quadrilateral in the picture and also the angles
between their diagonals:

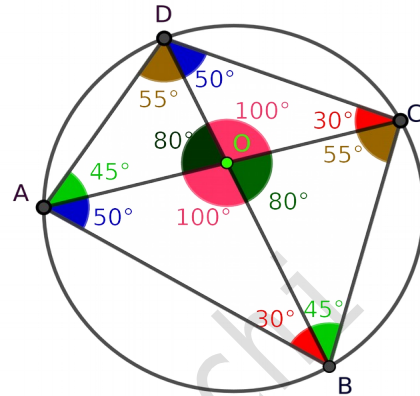**Ans)** Given , $\angle BDC = 50°$

So , $\angle BAC = 50°$

Given , $\angle ACD = 30°$

So, $\angle ABD = 30°$

Given , $\angle CBD = 45°$

So, $\angle CAD = 45°$

> *All angles made by an arc on the alternate arc are equal*

Consider $\triangle$ ABC,

$\angle ACB = 180° − (50° + 75°) = 180° − 125° = 55°$

So $\angle ADB = 55°$

Consider $\triangle$ AOD , $\angle AOD = 180° − (55° + 45°) = 180° − 100° = 80°$

$\angle DOC = 180° − 80° = 100°$ **(Linear pair)**

$\angle AOD = \angle BOC = 80°$ (opposite angles)

$\angle DOC = \angle AOB = 100°$ (opposite angles)

∴ Angles of the quadrilateral are

$\angle A = 45° + 50° = 95°$

$\angle B = 30° + 45° = 75°$

$\angle C = 55° + 30° = 85°$
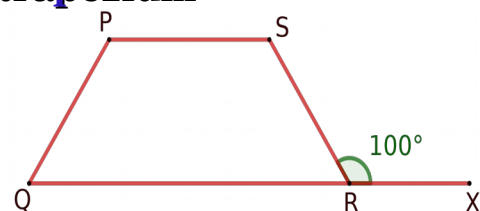
$\angle D = 50° + 55° = 105°$

Angles between diagonals are

$\angle AOD = \angle BOC = 80°$

$\angle DOC = \angle AOB = 100°$

Assignment

Q1) In the figure PQRS is an isosceles trapezium and QR is extended to X .

If < SRX = 100⁰ ,

find all angles of PQRS ?

Q2) Prove that any non- isosceles trapezium is not cyclic ?

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