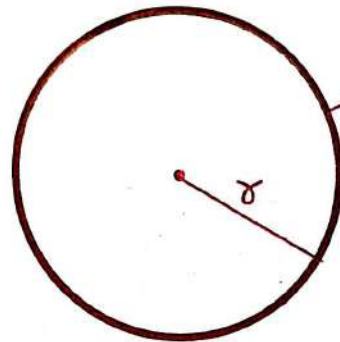


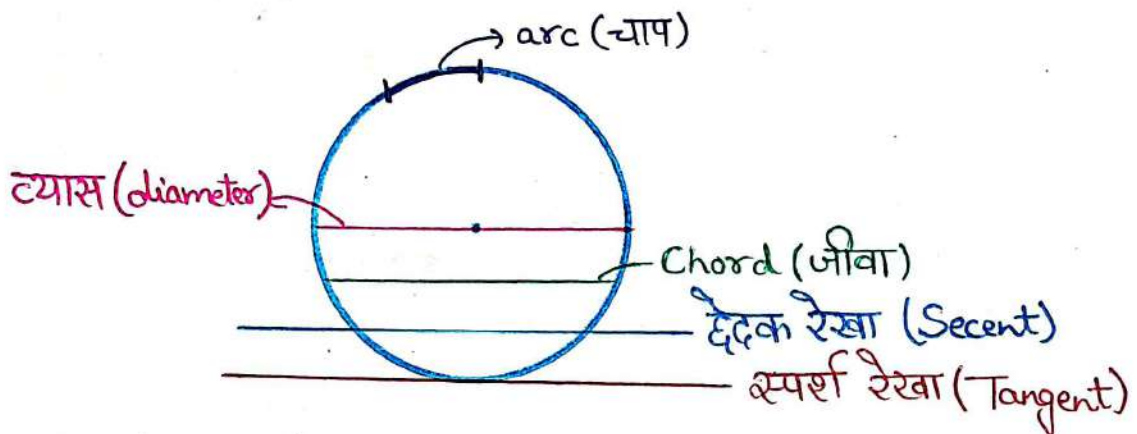
GEOMETRY

✦ CIRCLE (वृत्त) ✦

- A polygon of infinite sides.

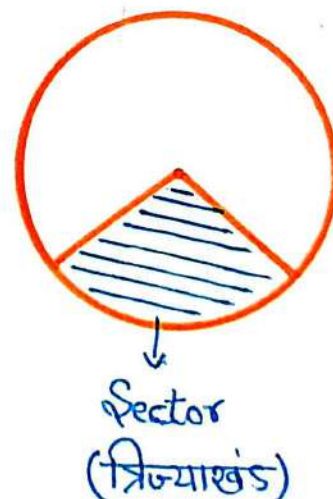
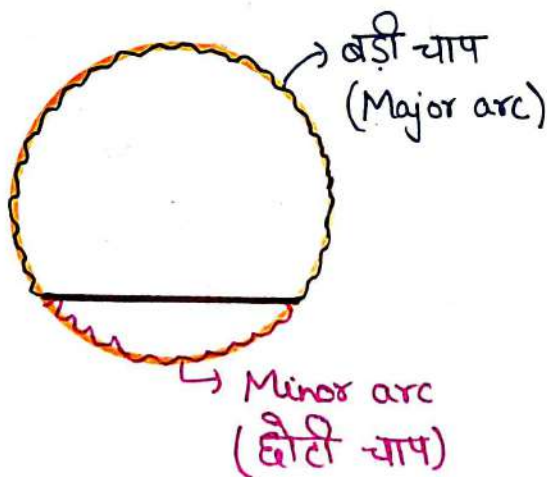


→ Circumference (परिधि)

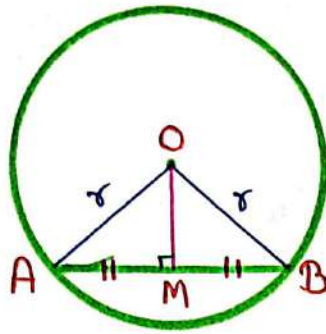


- Longest Chord → Diameter
(सबसे बड़ी जीवा → व्यास)

CHORD (जीवा)



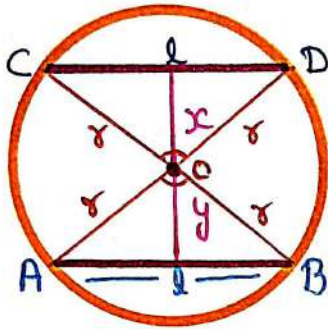
#



$$AM = MB$$

$\triangle OAB \rightarrow \text{Isosceles}$

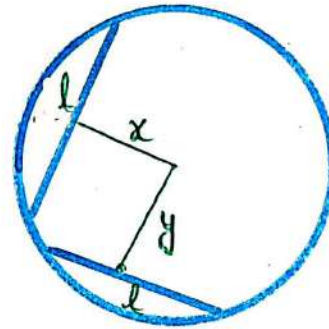
#



$$x = y$$

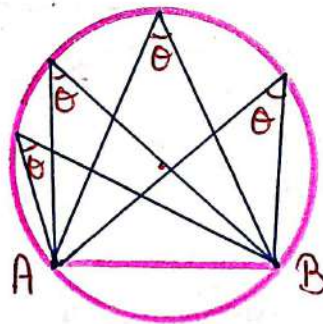
$$\triangle OCB \cong \triangle OAB$$

• Side Angle Side (SAS)

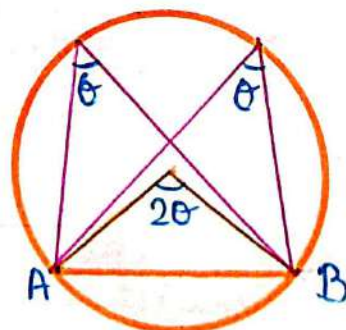


$$x = y$$

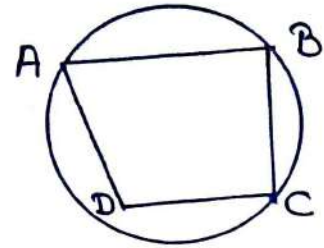
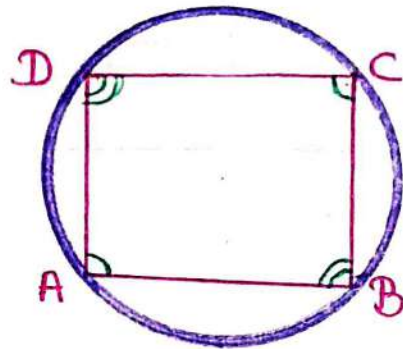
#



#



#



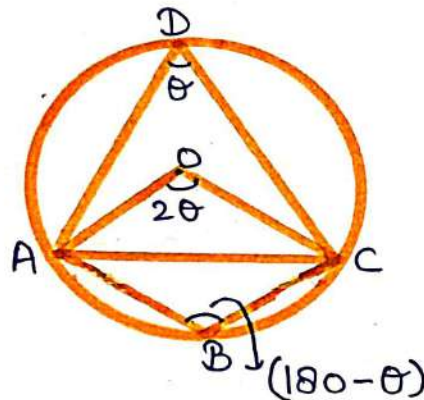
It is not cyclic quadrilateral
यह चक्रीय चतुर्भुज नहीं है।

$ABCD \rightarrow$ Cyclic Quadrilateral (चक्रीय चतुर्भुज)

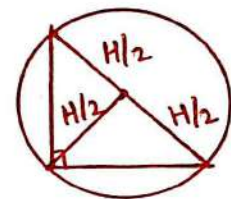
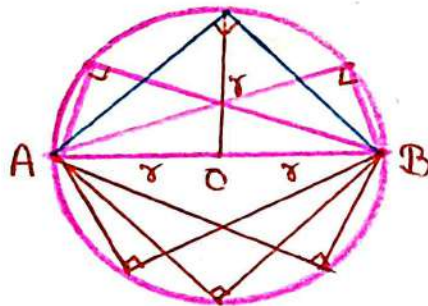
$$\begin{aligned} \angle A + \angle C &= 180^\circ \\ \angle B + \angle D &= 180^\circ \end{aligned}$$

- Sum of opposite angles is 180°
(विपरीत कोण का योग 180° होता है।)

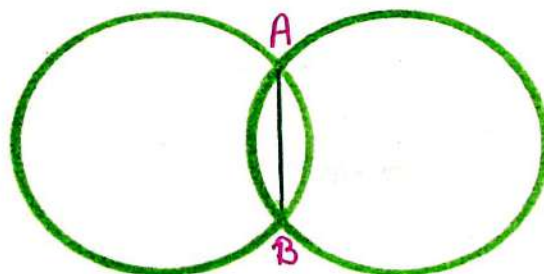
#



#

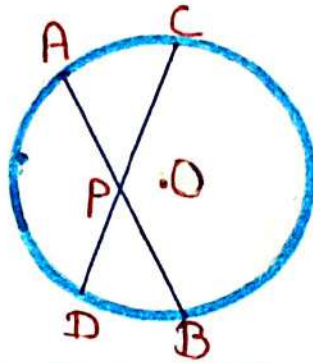


COMMON CHORD



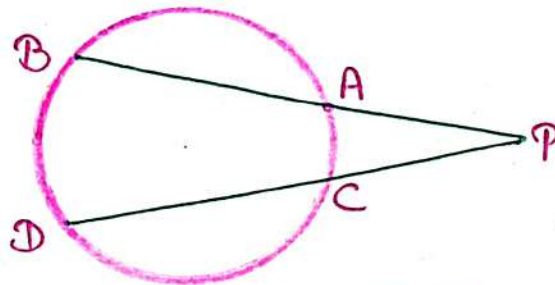
$AB \rightarrow$ Common Chord

#



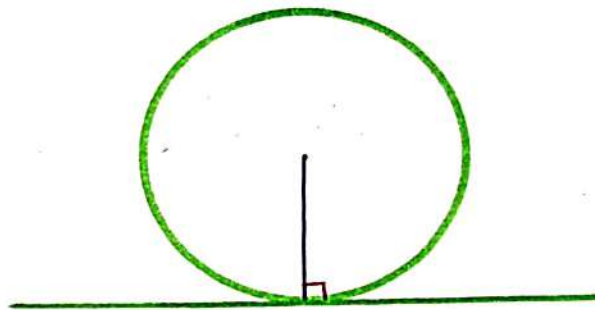
$$PA \times PB = PC \times PD$$

#

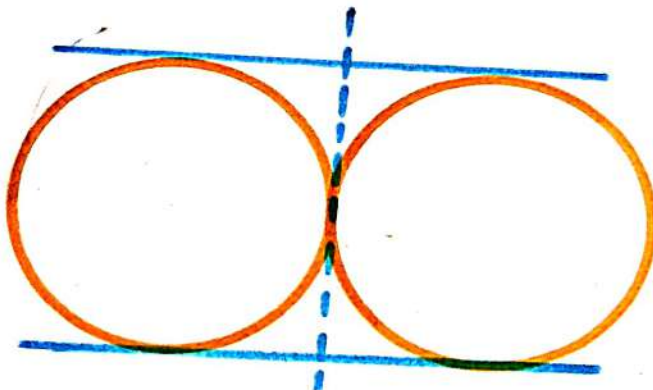


$$PA \times PB = PC \times PD$$

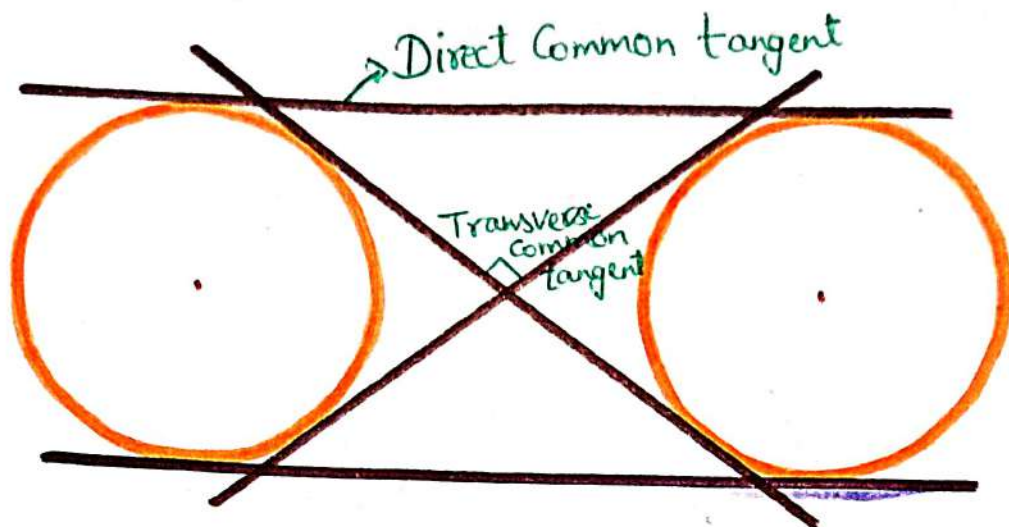
• स्पर्श रेखा (TANGENT) :-



- Circle के एक बिंदु से अनगिनत स्पर्श रेखा गुजर सकती है।
(Infinite number of tangents can pass through a single point)

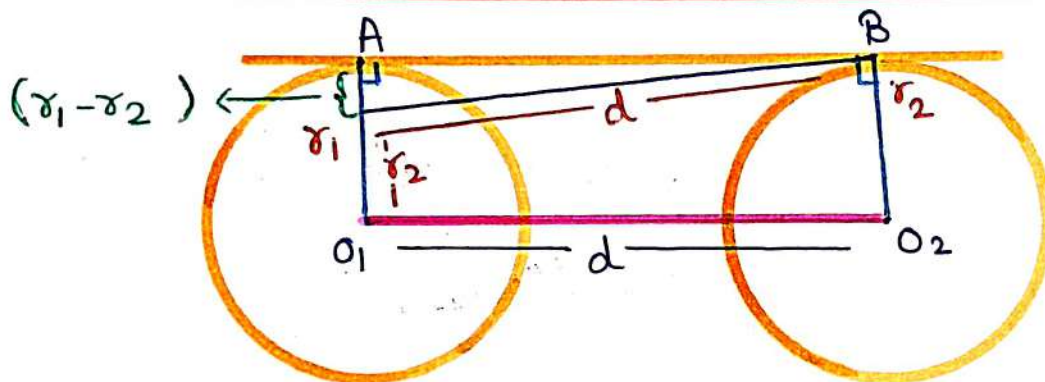


Maximum $\rightarrow$ 3 common tangents

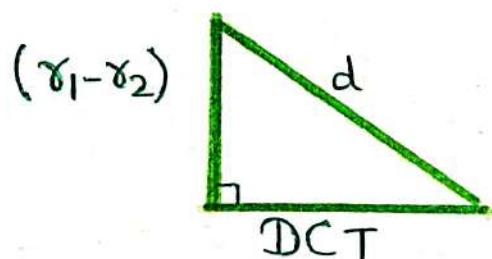


4 Maximum Common tangents

DIRECT COMMON TANGENT (DCT)
 उभयनिष्ठ स्पर्श रेखा



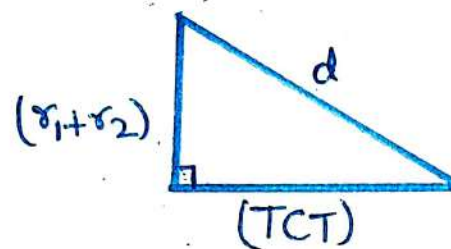
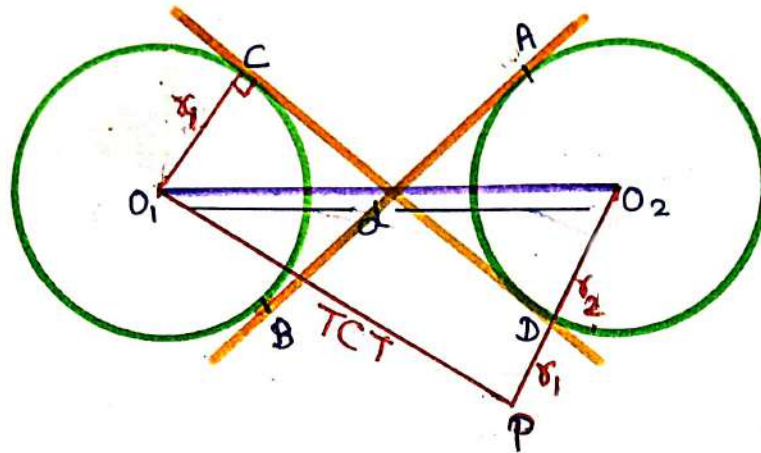
$AB \Rightarrow DCT$



$$d^2 = (r_1 - r_2)^2 + (DCT)^2$$

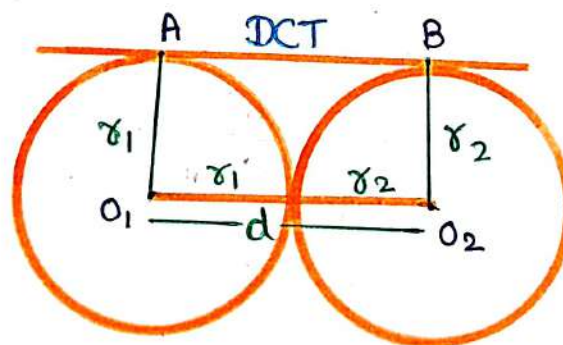
$$DCT = \sqrt{d^2 - (r_1 - r_2)^2}$$

TRANSVERSE COMMON TANGENT અનુપ્રસ્થ સ્પર્શ રેખા (TCT)



$$TCT = \sqrt{d^2 - (r_1 + r_2)^2}$$

#



$$(a+b)^2 - (a-b)^2 = 4ab$$

$$d = r_1 + r_2$$

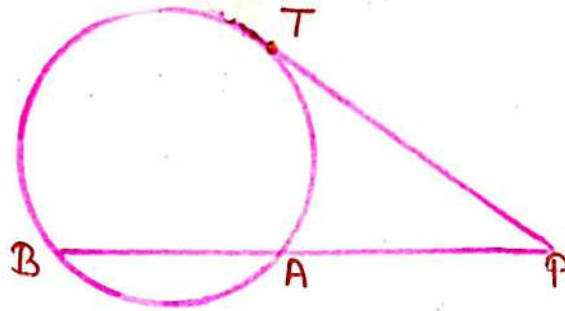
$$DCT = \sqrt{d^2 - (r_1 - r_2)^2}$$

$$\sqrt{(r_1 + r_2)^2 - (r_1 - r_2)^2}$$

$$\sqrt{4r_1r_2}$$

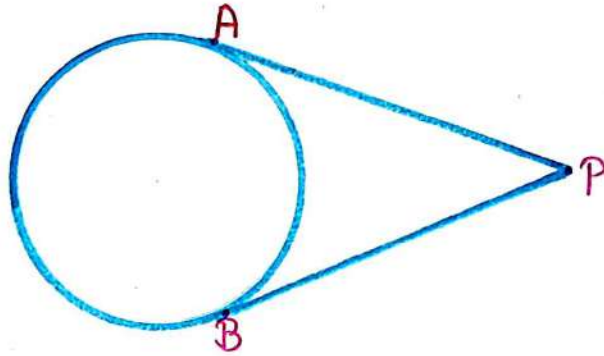
$$DCT = 2\sqrt{r_1r_2}$$

#



$$PT^2 = PA \times PB$$

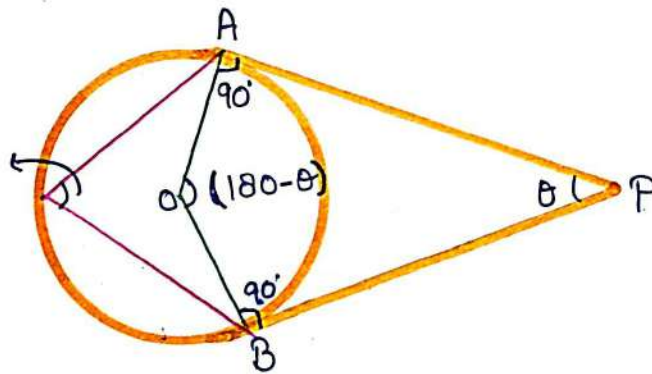
#



$$PA = PB$$

#

$$\frac{180 - \theta}{2} = 90 - \frac{\theta}{2}$$



Ex:-

