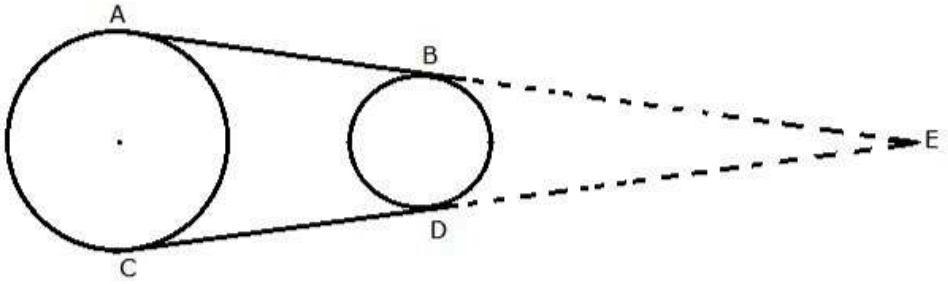
ex 9.3, exemplar x

(5)



to prove $AB = CD$

const. Produce AB and CD to meet at E

proof $EA = EC \dots (i)$ [tangents from same external point]

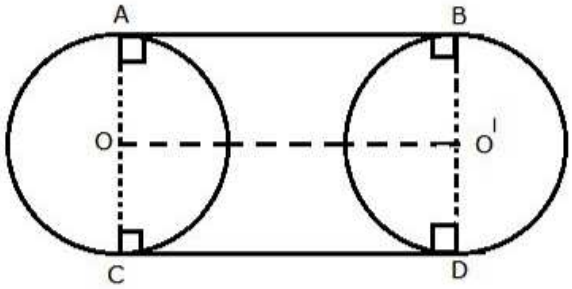
$EB = ED \dots (ii)$

$(i) - (ii)$

$EA - EB = EC - ED$

$\Rightarrow AB = CD$

(6)



to prove $AB = CD$

proof

$\angle A = \angle B = 90°$ [radius $\perp$ tangent]

$\therefore OA \parallel O'B$

$OA = O'B$ [radii of same circle]

quadrilateral $AOO'B$ is a parallelogram

similarly quadrilateral $COO'D$ is a parallelogram

$AB = OO'$ ... (i) [opposite sides of a parallelogram]

$CD = OO'$ ... (ii) [do]

From (i) and (ii)

$AB = CD$