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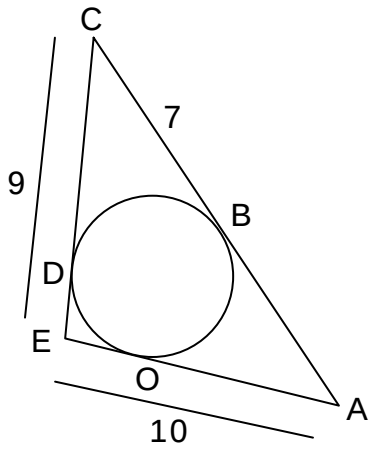
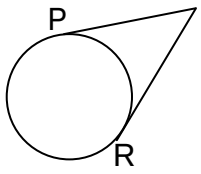
Perimeter of Polygons with Inscribed Circles - Step-by-Step Lesson

a. What is AB?



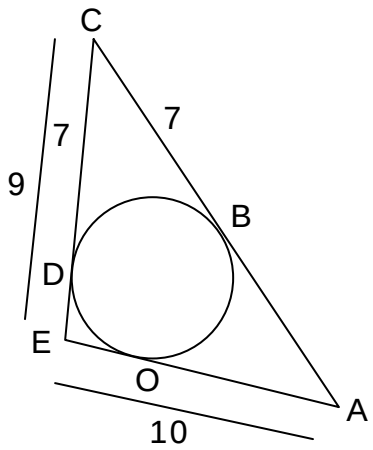
Explanation:

If P and R are two point on a circle and PQ and QR are tangent to the circle, then PQ and QR are congruent.



We have to find the unknown segment lengths

CD and CB are tangent to the inscribed circle from C. so, CD is congruent to BC. CD = BC = 7.



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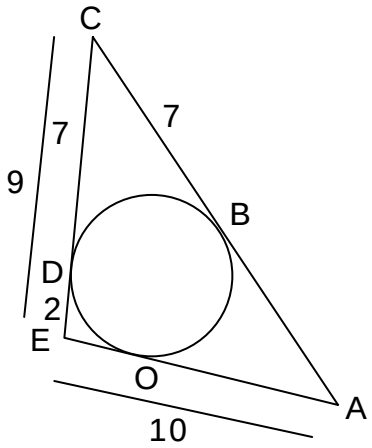
We know that CD and CE. We have use additive property of length to write an equation and find DE

CD + DE = CE

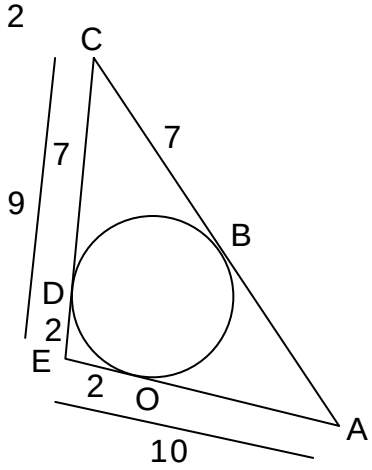
7 + DE = 9

DE = 2

So, DE is 2



OE and DE are tangents to the inscribed circle from E. so, OE is congruent to DE. OE = DE = 2



We know that OE and AE. We have use the additive property of write an equation and find OA.

OE + OA = AE

2 + OA = 10

OA = 8

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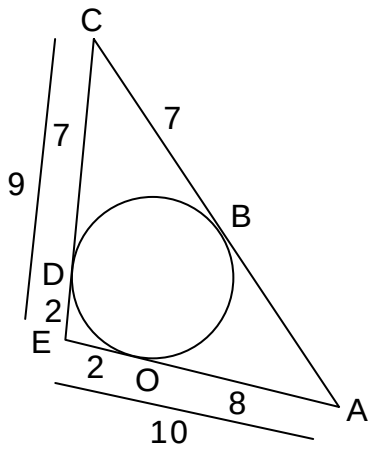
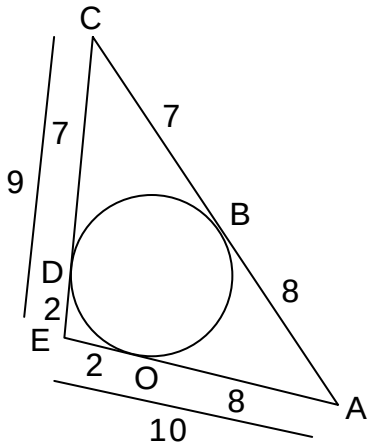
So, OA is 8



AB and OA are tangent to the inscribed circle from A. so, AB is congruent to OA. AB = OA = 8



So AB = 8.