

Homework 4 Problem 2 Solution

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Problem 2

In right triangle OBD , $\angle OBD + \angle ODB = 90^\circ$. Since $OA = OB$, $\angle OBD = \angle OAD$. Since $\angle OAC = 90^\circ$, $\angle OAD + \angle CAD = 90^\circ$. Since we also have $\angle OBD + \angle ODB$, we can conclude that $\angle CAD = \angle ODB$. Also, $\angle ODB = \angle ADC$. So $\angle DAC = \angle CDA$ and $AC = CD$.