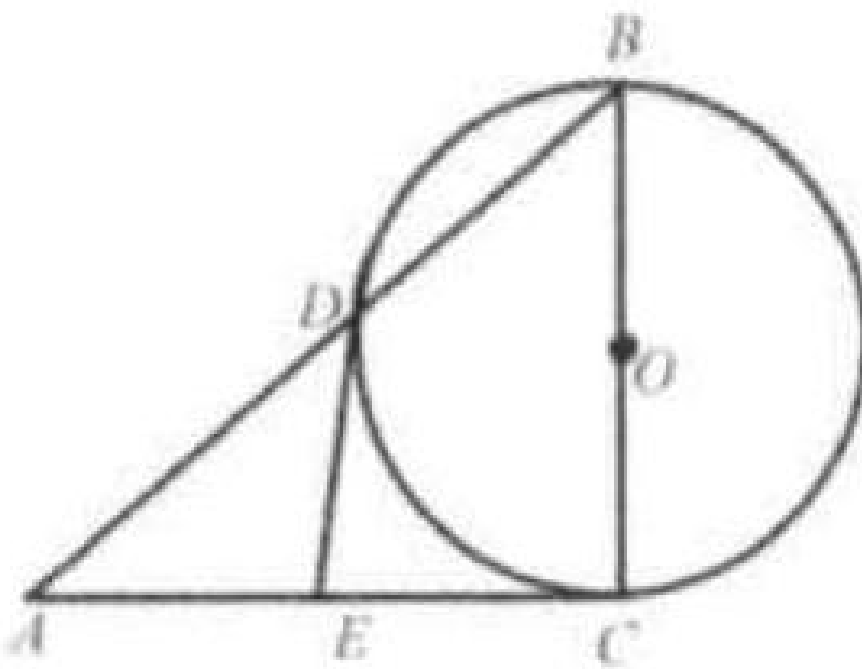


Example 3

ABC is a right triangle with $\angle C = 90^\circ$. Circle O is drawn using BC as the diameter to intersect AB at D . Draw tangent line through D to meet AC at E . Show that $DE = AE$.

Solution:



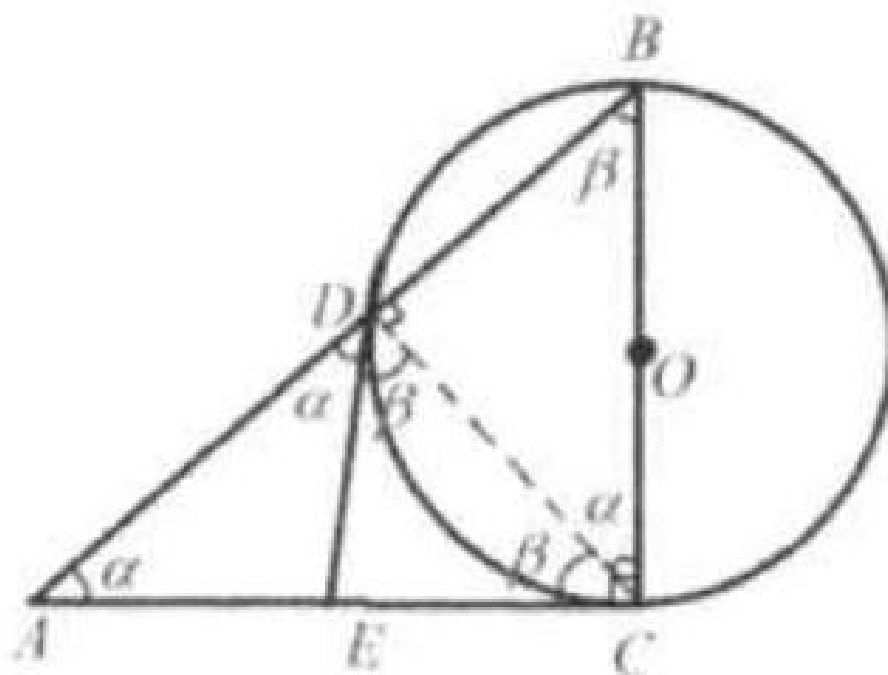
Connect CD .

Since BC is the diameter, $\angle BDC = \angle ADC = 90^\circ$.

Let $\angle BCD = \alpha$, $\angle CBD = \beta$.

So $\angle A = \alpha$, $\angle ECD = \beta$.

Since both ED and EC are tangent to circle O , $ED = EC$ and $\angle EDC = \angle ECD = \beta$.



Thus $\angle ADE = \alpha = \angle A$.
 Triangle EAD is an isosceles triangle. So $DE = AE$.