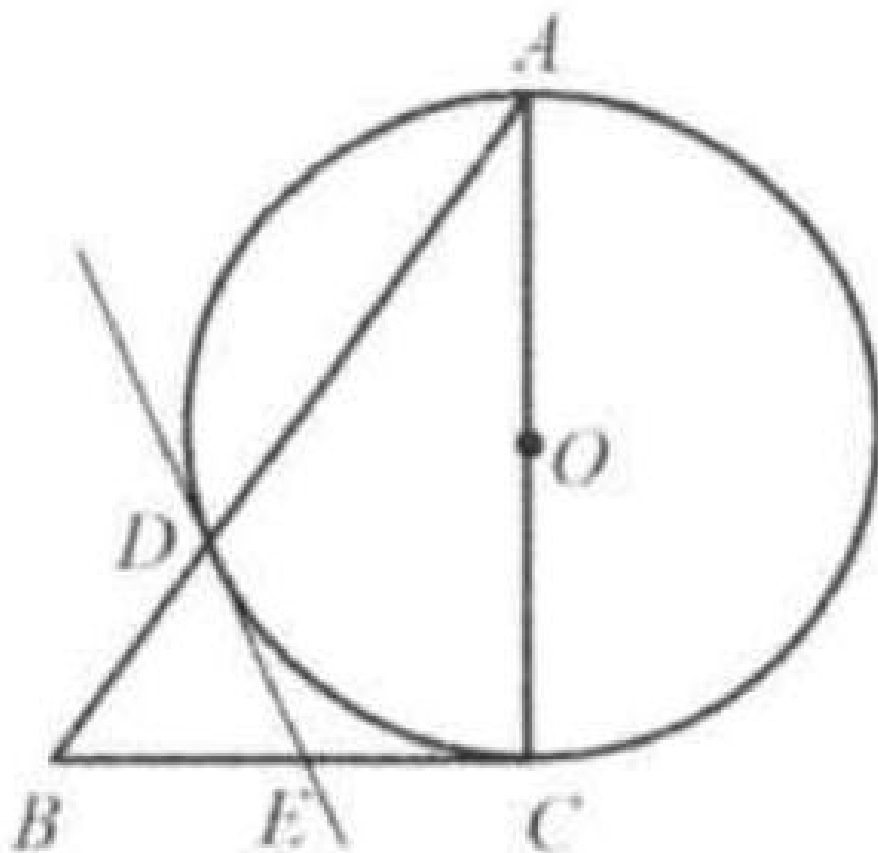


Example 2

As shown in the figure, $\triangle ABC$ is a right triangle with $\angle C = 90^\circ$. AC is the diameter of circle O . Circle O meets the hypotenuse AB at D . Draw the tangent through D to the circle to meet the leg BC at E . Prove: $BE = EC$.
Solution:



Connect CD , EO .
Since AC is the diameter, $\angle ADC = 90^\circ$. We also know that $\angle ACB = 90^\circ$.
Let $\angle A = \alpha$, $\angle B = \angle ACD = \beta$.
Then $\angle ODC = \angle OCD = \beta$

A geometric diagram of a sphere with center O . A vertical line segment AO represents the radius. A horizontal line segment BC is tangent to the sphere at point C . A line segment AB is tangent to the sphere at point D . A line segment BE is tangent to the sphere at point E . A dashed circle represents the great circle passing through A, D, E, C . The angle α is the angle between AO and AD . The angle β is the angle between AB and BC . The angle β is also the angle between BE and BC . The angle β is also the angle between OD and OE .

midpoint of BC .
That is, $BE = EC$.