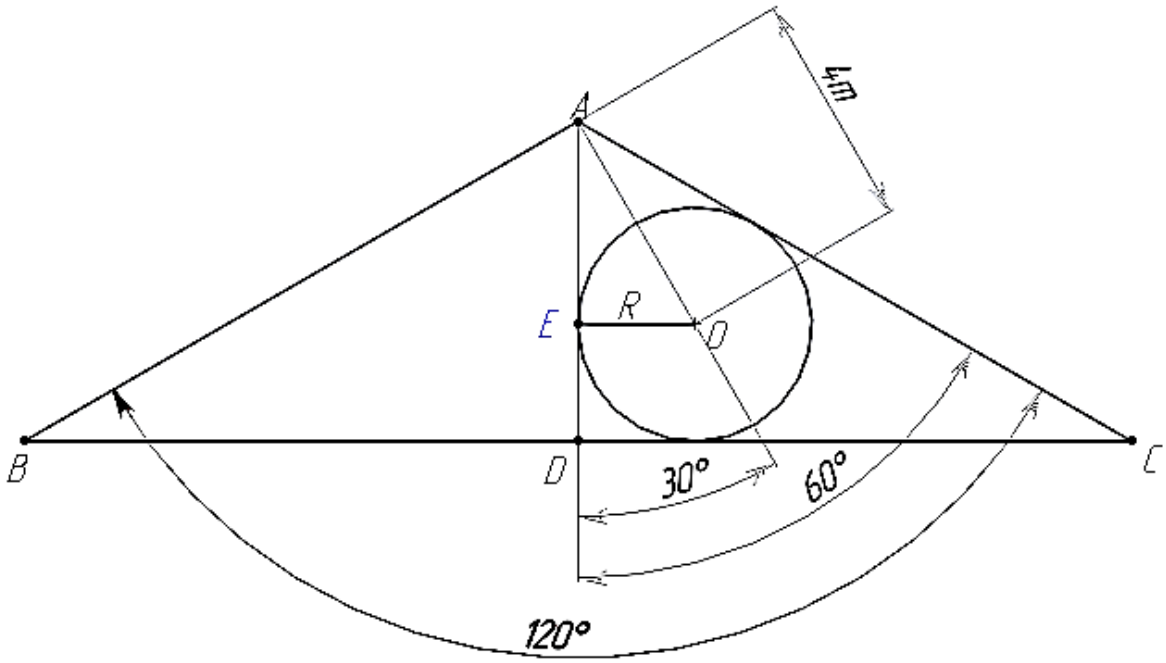
81523, Math / Geometry/ Completed

In a Triangle AB=AC, <BAC=120°. D is the middle point of BC. O circle is drawn inside the triangle which touches AD,CD,& AC. If OA=4(meter) What's the radius of the circle???

Solution.

AD is the median, height and bisector, because ΔABC is an isosceles.

AD ⊥BC, ∠BAD=∠DAC=60°.Δ ADC - rectangular.O - center of the inscribed circle.The center of the inscribed circle lies on the bisectors of the angles of the triangle. AO-bisector. ∠ EAO=∠OAC=30 °. OE is the radius of the inscribed circle. OE ⊥AD. Δ AOE- rectangular triangle. AE=AO*sin30∘=2m



Answer: R=2m