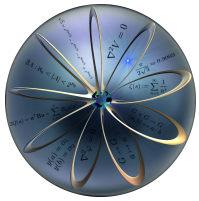

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exterior angles of triangle

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The exterior angle of an angle of triangle is greater than both other angles of the triangle.

Proof. Let us study in an arbitrary triangle ABC for example the exterior angle $\wedge ACD$ where D is point on the lengthening of the side BC nearer to C than to B. Let E be the midpoint of AC. Let BE be the median of the triangle. We find on its lengthening the point F such that $EF = EB$. Then the triangles ABE and CEF are congruent (SAS). Consequently, we have $\wedge ECF = \wedge BAE$ and therefore $\wedge ACD > \wedge BAC$. Analogically one shows that $\wedge ACD > \wedge ABC$. $\square$

References

[1] Karl Ariva: *Lobatsevski geomeetria.* Kirjastus "Valgus", Tallinn (1992).