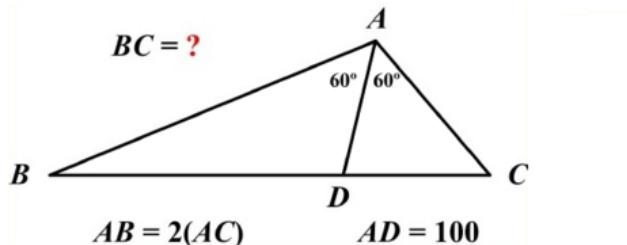


From : Evander Tandiarrang
 SD. Harapan Balem Wamena
 (Primary School, Grade 6)

Hard Geometry Problem From Switzerland

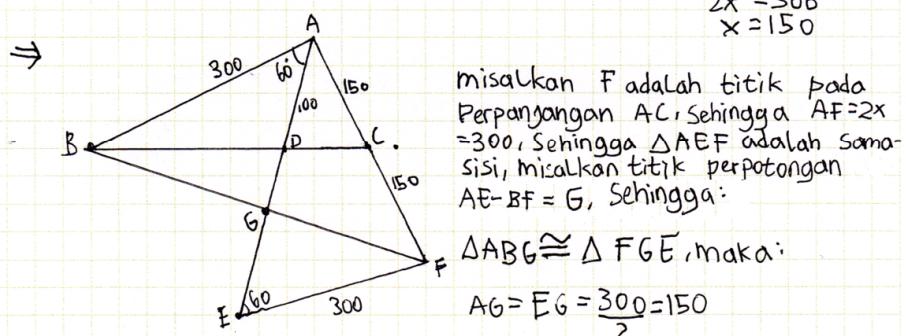
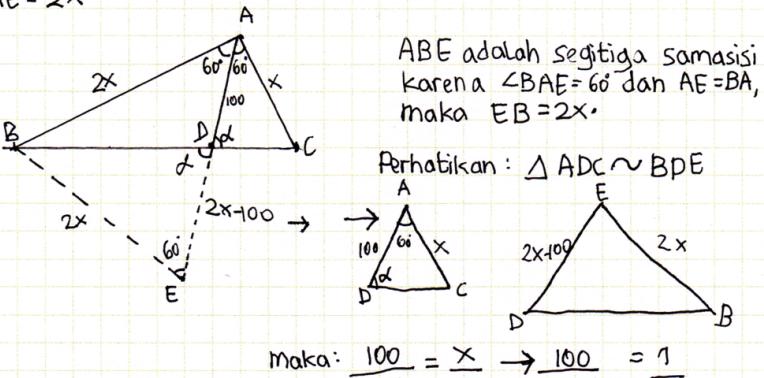
Posted September 9, 2019 By Presh Talwalkar.

This problem is adapted from a math contest in Switzerland—no calculators allowed.

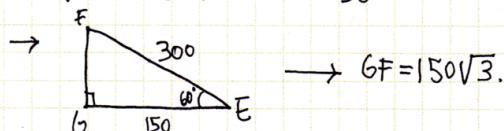


In triangle ABC above, angle A is bisected into two 60° angles. If $AD = 100$, and $AB = 2(AC)$, what is the length of BC ?

Jawab: Misalkan $AC = x$, Maka panjang $AB = 2x$.
 Misalkan AE merupakan perpanjangan garis AD , Dengan $AE = 2x$



Karena $\angle GEF = \angle GAF = 60^\circ$, $EG = GA = 150$ dan $EF = AF = 300$
 maka $\angle EGF = \angle FGA = 90^\circ$



Karena Garis ED dan FB bertolak belakang, maka $\angle BGD = 90^\circ$
 Juga $DG = 150 - 100 = 50$, maka $BD = \sqrt{(150\sqrt{3})^2 + 50^2} = \sqrt{70.000} = 100\sqrt{7}$

Karena: $\frac{CD}{BD} = \frac{100}{200} \rightarrow CD = \frac{100}{200} \cdot 100\sqrt{7} = 50\sqrt{7}$

Jadi pangjang $BC = 100\sqrt{7} + 50\sqrt{7} = 150\sqrt{7}$ cm