

To Prove: $EF \parallel BH$

$\angle[HB,FE]$

$= -\angle[CHB] + \angle[HC,FE] \text{ (addition)}$

$\bullet \bullet \bullet \angle[CHB] = \angle[CEB] \text{ (rule8)} \rightarrow \bullet$

$= \angle[HC,FE] - \angle[CEB]$

$\bullet \bullet \bullet \angle[HC,FE] = -\angle[DAC] \text{ (rule8)}$

$= -\angle[CEB] - \angle[DAC]$

$\bullet \bullet \bullet \angle[CEB] = -\angle[BCA] + \angle[1] \text{ (rule18)}$

$= -\angle[DAC] + \angle[BCA] - \angle[1]$

$\bullet \bullet \bullet \angle[DAC] = -\angle[CBA] + \angle[1] \text{ (rule11)}$

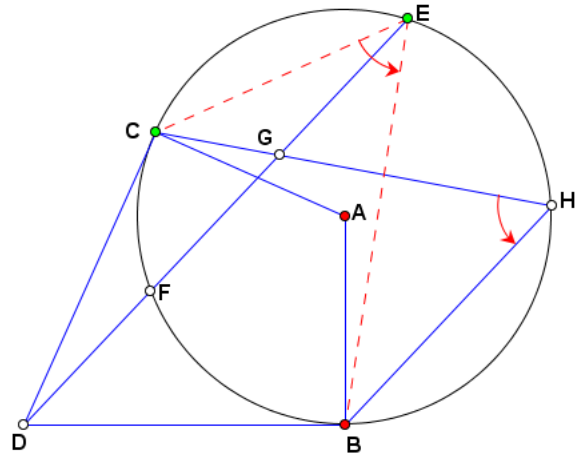
$= \angle[BCA] + \angle[CBA]$

$\bullet \bullet \bullet \angle[BCA] = \angle[CBA] - \angle[CAB] \text{ (addition)}$

$= 2\angle[CBA] - \angle[CAB]$

$\bullet \bullet \bullet \angle[CBA] = \angle[CAB] \text{ (rule24)}$

$= \angle[0] \text{ Q.E.D.}$



Example 1 40 : As shown in the figure, it is known that $AB = AC$, take A as the center and AB as the radius to draw a circle, the tangent lines passing through B and C intersect at D , and the straight line DE passing through D intersects the circles at E and F , G is in EF point, CG intersects the circle with H , and proves: $HB \parallel ED$.

$$\frac{E-B}{H-B} \frac{E-D}{H-C} \frac{A-D}{A-C} = 1$$

Explanation: Because G is the midpoint of EF , $AG \perp EF$, so D, A, G , and C are in a circle, and $\angle CGD = \angle CAD$.