

PROBLEM AS-2 ANSWER

Construct AF perpendicular to AC and CG perpendicular to CA.

Let angle CAB = h , angle ACB = j , and angle EBD = k .

Angle FAB = $90^\circ - h$, so angle FDB = $45^\circ - h/2$.

Angle GCB = $90^\circ - j$, so angle GEB = $45^\circ - j/2$

In triangle EBD: angle $k + 45^\circ - h/2 + 45^\circ + 45^\circ + 45^\circ - j/2 = 180^\circ$

Angle $k = h/2 + j/2$, but $h + j = 90^\circ$, so angle $k = 45^\circ$