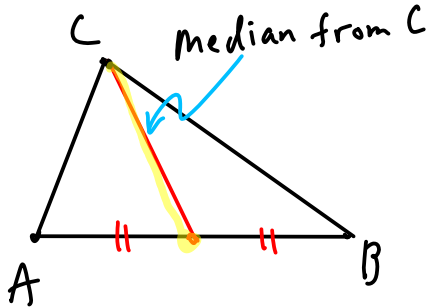


§4.8 Proving Isosceles Δ Conjectures Using Flowcharts

Conjecture #1: The \sphericalangle bisector from the vertex \sphericalangle of an isosceles Δ is a median.

First, what's a median in a Δ ? A segment drawn from a vertex to the midpt of the opp. side.

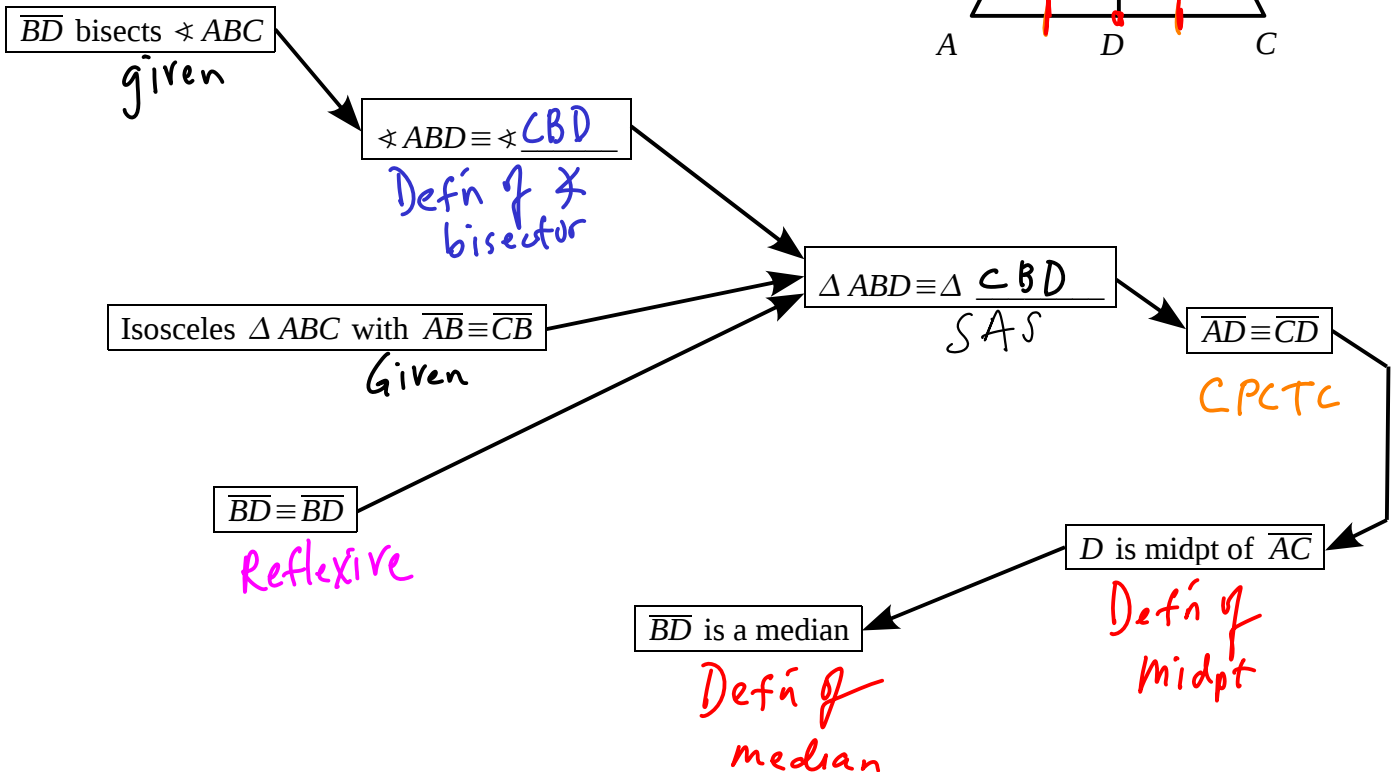
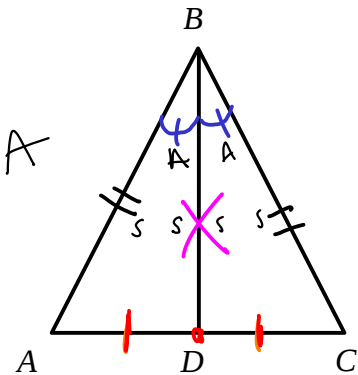
Next, let's sketch a few examples:



Given: Isosceles ΔABC with $\overline{AB} \cong \overline{CB}$;
 \overline{BD} bisects $\sphericalangle ABC$

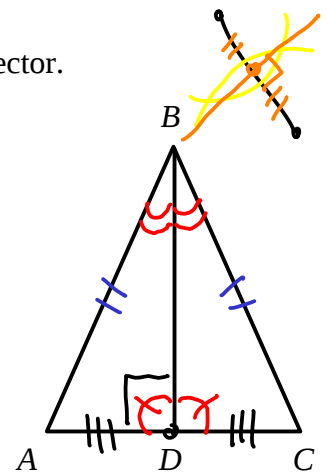
Prove: \overline{BD} is a median

SAS
 SSA



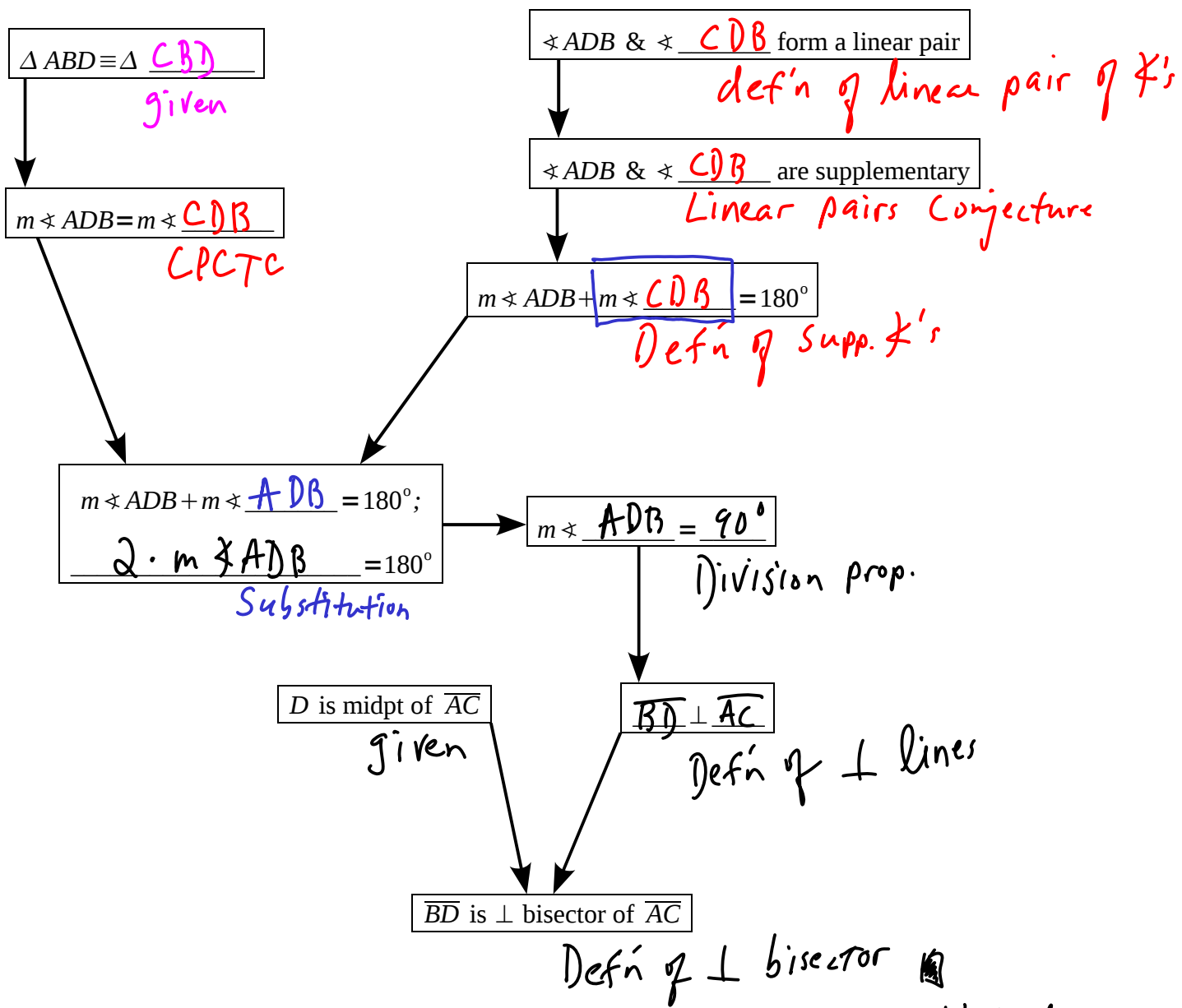
Conjecture #2: The \sphericalangle bisector from the vertex \sphericalangle of an isosceles \triangle is a \perp bisector.

First, what's the definition of \perp bisector? a line \perp to the segment it bisects.



Given: Isosceles $\triangle ABC$ with $\overline{AB} \cong \overline{CB}$;
 $\checkmark \overline{BD}$ bisects $\sphericalangle ABC$
 $\triangle ABD \cong \triangle CBD$ (from last proof)
 D is midpoint of \overline{AC} (from last proof)

Prove: \overline{BD} is a \perp bisector of \overline{AC}



Since $\overline{BD} \perp \overline{AC}$, \overline{BD} isn't only a **median** and a **perpendicular bisector**; it's also a(n) altitude.