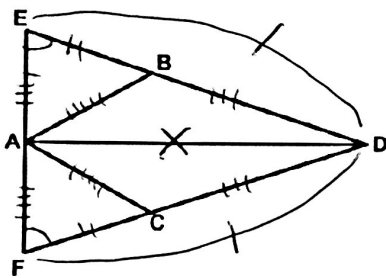


5)

In the following diagram it is known that  $\overline{ED} \cong \overline{FD}$ ,  $\overline{EB} \cong \overline{FC}$ , and  $\overline{DA}$  bisects  $\overline{EF}$ .

Prove:  $\triangle BAD \cong \triangle CAD$

\* Need  
 $\triangle BAE \cong$   
 $\triangle CAF$   
 First \*



$$\overline{ED} \cong \overline{FD} \rightarrow \text{given}$$

$$\overline{EB} \cong \overline{FC} \rightarrow \text{given}$$

$$\overline{DB} \cong \overline{DC} \rightarrow \text{subtraction prop}$$

$$\overline{DA} \text{ bisects } \overline{EF} \rightarrow \text{given}$$

$$\overline{EA} \cong \overline{AF} \rightarrow \text{bisector creates 2 } \cong \text{ parts}$$

$$\triangle DEF \text{ is isos } w/ \angle D \text{ as vertex } \rightarrow \text{it has 2 } \cong \text{ sides}$$

$$\angle E \cong \angle F \rightarrow \text{isos } \triangle \text{ has } \cong \text{ base } \angle \text{'s}$$

$$\triangle BAE \cong \triangle CAF \rightarrow \text{SAS}$$

$$\overline{BA} \cong \overline{CA} \rightarrow \text{CPCTC}$$

$$\overline{DA} \cong \overline{DA} \rightarrow \text{any thing } \cong \text{ to itself}$$

$$\triangle BAD \cong \triangle CAD \rightarrow \text{SSS}$$