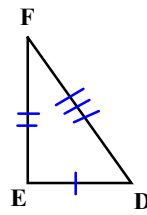
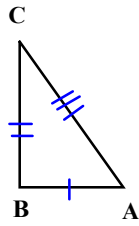
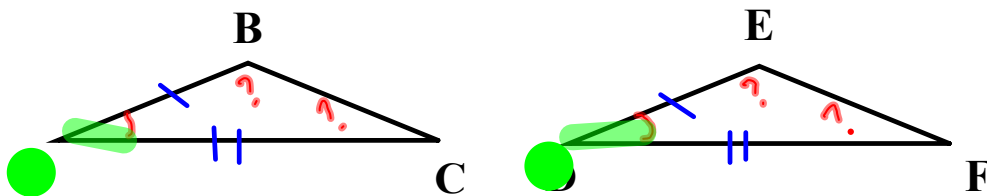


**Sec. 4.4 - Congruent
Triangles: SAS & SSS**

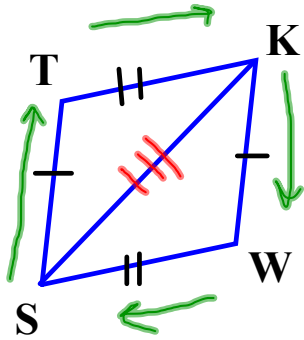
Postulate 4.1 - If three sides of one triangle are equal in measure to the corresponding sides of another triangle, then the triangles are congruent. (**SSS** - side-side-side)



Postulate 4.2: If two sides & the **included angle** of one triangle are equal in measure to the corresponding sides & angle of another triangle, then the triangles are congruent. (**SAS** - side-angle-side)



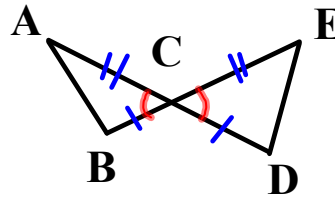
For each pair of triangles, tell whether there is enough information to prove that the triangles are congruent & why.



\cong ; SSS

$\triangle STK \cong \triangle KWS$

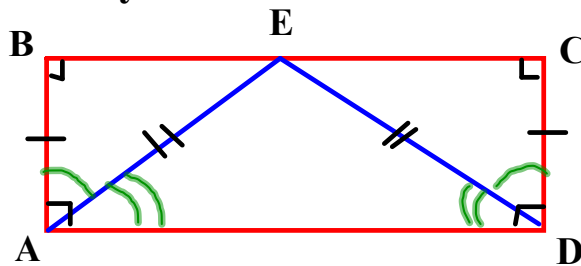
$SK \cong SK \rightarrow$ Reflexive Prop.



\cong ; SAS

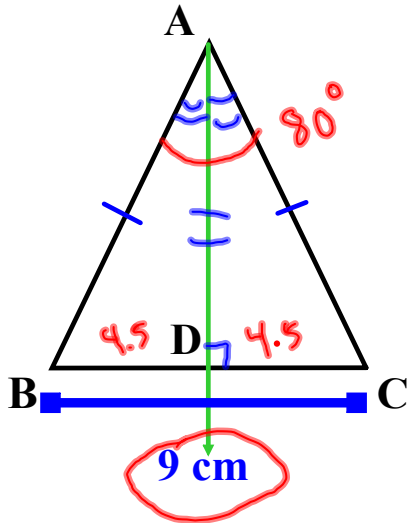
Vertical \angle 's

Name two congruent triangles & state the reason why.



$\triangle ABE \cong \triangle DCE$
SAS

In triangle ABC, AB=AC, AD bisects $\angle BAC$, $m\angle BAC = 80^\circ$, & BC= 9cm. Find $m\angle BAD$, $m\angle CAD$, BD, & CD.



$$\angle BAD = 40^\circ$$

$$\angle CAD = 40^\circ$$

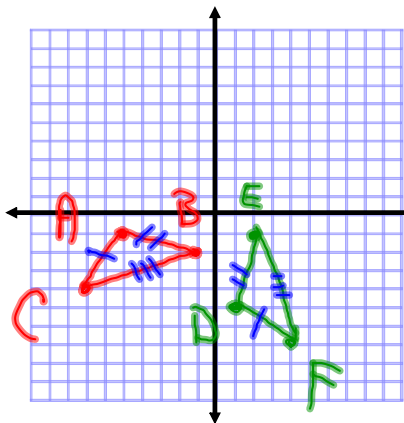
$$BD = 4.5 \text{ cm}$$

$$CD = 4.5 \text{ cm}$$

Graph triangle ABC :
A(-5,-1) , B(-1,-2) , C(-7,-4)

Graph triangle DEF :
D(1,-5) , E(2,-1) , F(4,-7)

Determine if the triangles are congruent (find the length of each side)



\cong
SSS

$$AC = \sqrt{(-5+7)^2 + (-1+4)^2}$$

$$AC = \sqrt{4+9} = \sqrt{13}$$

$$AB = \sqrt{(-5+1)^2 + (-1+2)^2}$$

$$AB = \sqrt{16+1} = \sqrt{17}$$

$$BC = \sqrt{(-1+7)^2 + (-2+4)^2}$$

$$BC = \sqrt{36+4} = \sqrt{40}$$

$$DF = \sqrt{(1-4)^2 + (-5+7)^2}$$

$$DF = \sqrt{9+4} = \sqrt{13}$$

$$DE = \sqrt{(1-2)^2 + (-5+1)^2}$$

$$DE = \sqrt{1+16} = \sqrt{17}$$

$$EF = \sqrt{(2-4)^2 + (-1+7)^2}$$

$$EF = \sqrt{4+36} = \sqrt{40}$$

Homework:

**P.267, # 8, 16-19 all, 27, 28,
35, 37-39 all, 43, 46-49 all**

Honors: 31, 36