Name_____Period_____Date_____

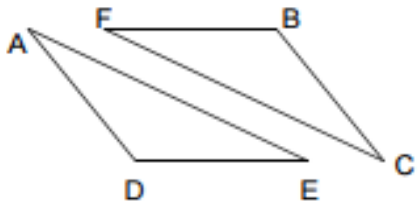
14.6 Proving Triangle Congruence

Proving Triangles Congruent using SSS, SAS, AAS and ASA

For the following sets of triangles, perform the following:

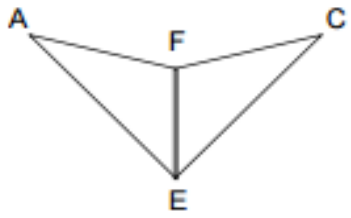
a.) diagram the congruencies
b.) decide if the triangles are congruent by one of the four postulates/theorems
c.) write the congruence statement. If not possible, write that and give a brief explanation why.

1.



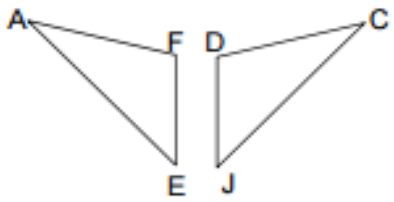
$\angle A \cong \angle C$, $\angle E \cong \angle F$, $\overline{AE} \cong \overline{CF}$

2.



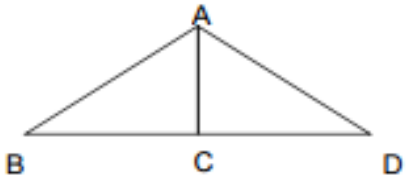
$\overline{AF} \cong \overline{CF}$, $\overline{AE} \cong \overline{CE}$

3.



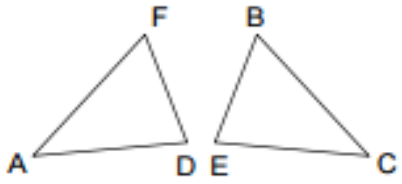
$\angle A \cong \angle C$, $\angle E \cong \angle J$, $\overline{FE} \cong \overline{DJ}$

4.



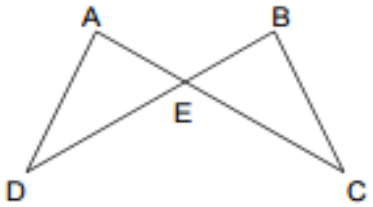
$\angle B \cong \angle D$, $\overline{AC} \perp \overline{BD}$

5.



$\angle D \cong \angle E$, $\overline{FD} \cong \overline{BE}$, $\overline{AD} \cong \overline{CE}$

6.



$\overline{AD} \cong \overline{BC}$, $\overline{AE} \cong \overline{BE}$

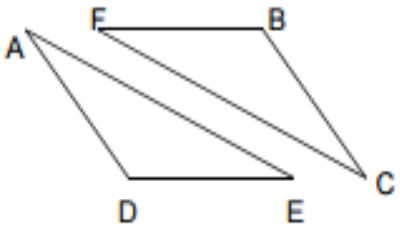
For the following sets of triangles, perform the following:

a.) diagram the congruencies

b.) decide if the triangles are congruent ***by the listed postulate or theorem***

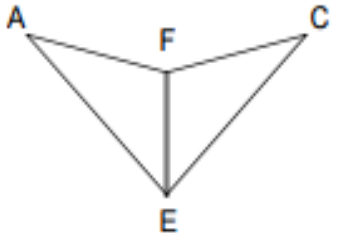
c.) write the congruence statement. If not possible, write that and give a brief explanation why.

7.



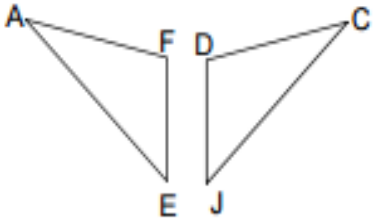
$\angle D \cong \angle B, \angle E \cong \angle F, \overline{AD} \cong \overline{CD}$ AAS

8.



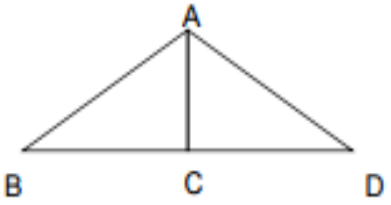
$\angle AEF \cong \angle CEF, \overline{AF} \cong \overline{CF}$ ASA

9.



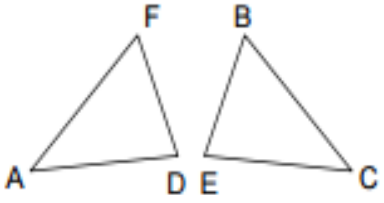
$\overline{AE} \cong \overline{CJ}, \overline{EF} \cong \overline{JD}, \angle E \cong \angle J$ SAS

10.



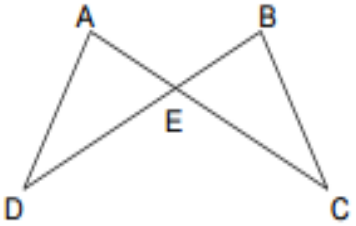
$\overline{AB} \cong \overline{AD}, \overline{BC} \cong \overline{DC}$ SSS

11.



$\angle A \cong \angle C, \angle D \cong \angle E, \overline{AD} \cong \overline{CE}$ ASA

12.



$\angle D \cong \angle C, \overline{DE} \cong \overline{CE}$ SAS