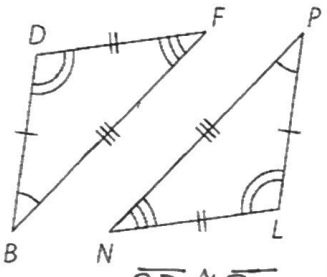
Rigid Motions and Congruent Figures

1-2. Use the diagrams to create a congruence statement for each set of congruent triangles.

1.

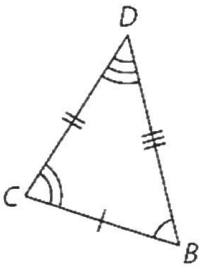


$\angle B \cong \angle P$
$\angle D \cong \angle L$
$\angle F \cong \angle N$

$\overline{BD} \cong \overline{PL}$
$\overline{DF} \cong \overline{LN}$
$\overline{FB} \cong \overline{NP}$

$\triangle BDF \cong \triangle PLN$

2.



$\angle B \cong \angle F$
$\angle C \cong \angle H$
$\angle D \cong \angle G$

$\triangle BCD \cong \triangle FHG$

$\overline{BC} \cong \overline{FH}$
$\overline{CD} \cong \overline{HG}$
$\overline{DB} \cong \overline{GF}$

3-5. Name the corresponding angles and sides for each pair of congruent triangles.

3. $\triangle QRS \cong \triangle WXY$

$\angle Q \cong \angle W$ $\quad \overline{QR} \cong \overline{WX}$
$\angle R \cong \angle X$ $\quad \overline{RS} \cong \overline{XY}$
$\angle S \cong \angle Y$ $\quad \overline{SQ} \cong \overline{YW}$

4. $\triangle AFH \cong \triangle CGJ$

$\angle A \cong \angle C$ $\quad \overline{AF} \cong \overline{CG}$
$\angle F \cong \angle G$ $\quad \overline{FH} \cong \overline{GJ}$
$\angle H \cong \angle J$ $\quad \overline{HA} \cong \overline{JC}$

5. Suppose $\triangle ABC \cong \triangle EFG$. For each of the following, name the corresponding part.

a. $\angle A \cong \angle E$

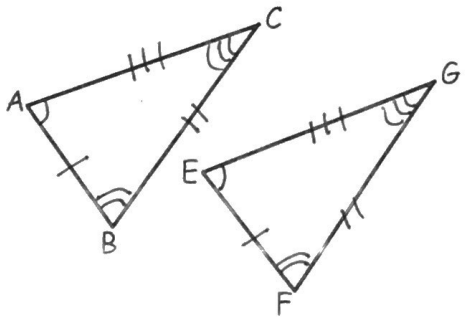
b. $\angle BCA \cong \angle FGE$

c. $\overline{AC} \cong \overline{EG}$

d. $\angle F \cong \angle B$

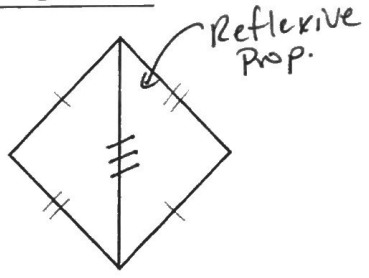
e. $\angle GEF \cong \angle CAB$

f. $\overline{GE} \cong \overline{CA}$

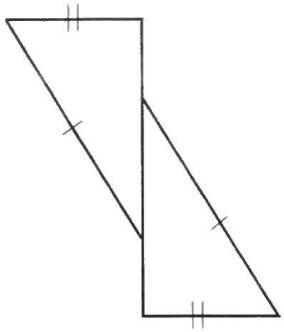


If congruent, state the congruence postulate, SSS, SAS, ASA, AAS, or HL. If not congruent, write none.

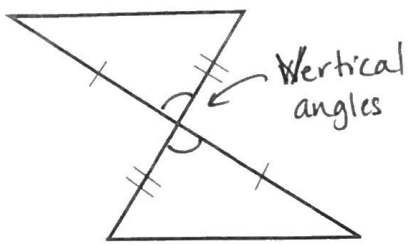
6. SSS



7. not $\cong$

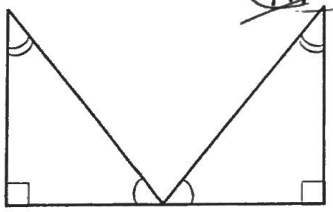


8. SAS

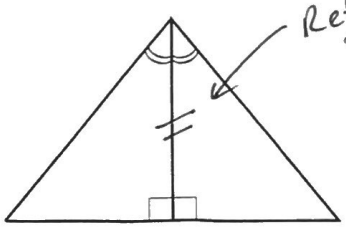


9. none "No Batteries"

AAA



10. ASA

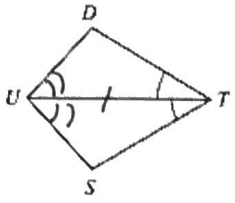


State what additional information is required in order to know that the triangles are congruent for the reason given.

ASA

$\overline{UT} \cong \overline{UT}$

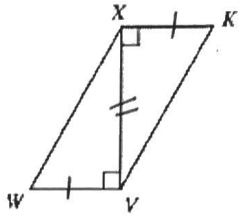
$\angle TUD \cong \angle TUS$



SAS

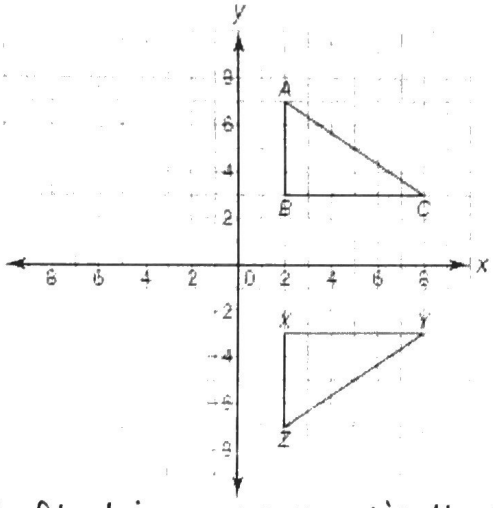
$\overline{XK} \cong \overline{VW}$

$\overline{XV} \cong \overline{XV}$



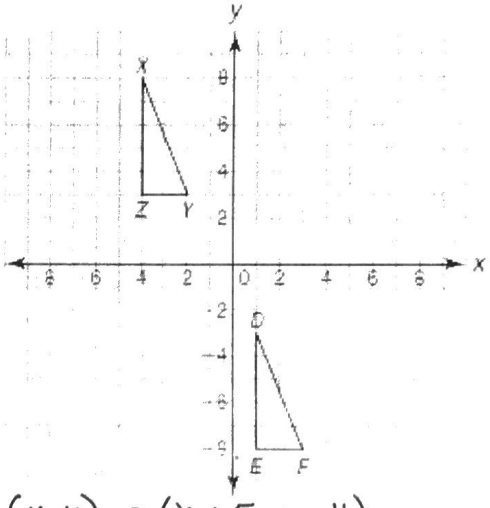
12-15. Identify the transformation used to create ΔXYZ on each coordinate plane. Identify the congruent angles and the congruent sides. Then, write a triangle congruence statement.

12.



- Reflection over x-axis $y = 0$
- $\angle B \cong \angle X$, $\angle C \cong \angle Y$, $\angle A \cong \angle Z$
- $\overline{AB} \cong \overline{ZX}$, $\overline{BC} \cong \overline{XY}$, $\overline{AC} \cong \overline{ZY}$

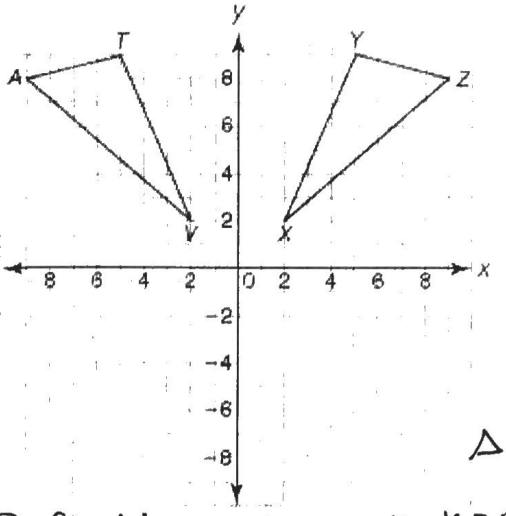
13.



- $(x, y) \rightarrow (x + 5, y - 11)$
- $\angle X \cong \angle D$, $\angle Z \cong \angle E$, $\angle Y \cong \angle F$
- $\overline{XZ} \cong \overline{DE}$, $\overline{XY} \cong \overline{DF}$, $\overline{ZY} \cong \overline{EF}$

$\Delta XZY \cong \Delta DEF$

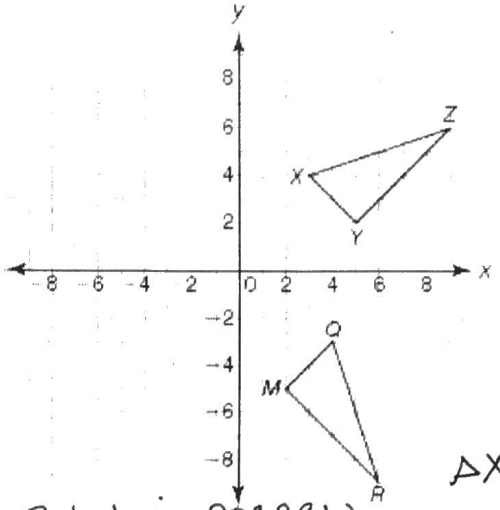
14. $\Delta ABC \cong \Delta ZXY$



$\Delta ATV \cong \Delta ZYX$

- Reflection over y-axis $x = 0$
- $\angle A \cong \angle Z$, $\angle T \cong \angle Y$, $\angle V \cong \angle X$
- $\overline{AT} \cong \overline{ZY}$, $\overline{TV} \cong \overline{YX}$, $\overline{AV} \cong \overline{ZX}$

15.



$\Delta XYZ \cong \Delta QMR$

- Rotation 90° CCW
- $\angle M \cong \angle Y$, $\angle R \cong \angle Z$, $\angle Q \cong \angle X$
- $\overline{MR} \cong \overline{YZ}$, $\overline{RQ} \cong \overline{ZX}$, $\overline{QM} \cong \overline{XY}$