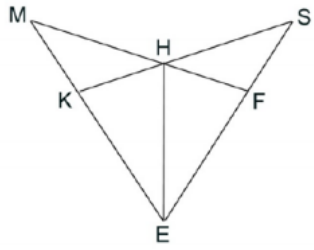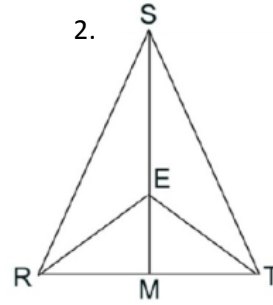1.

Given: $\overline{ME} \cong \overline{SE}$; $\overline{MH} \cong \overline{SH}$

Prove: $\overline{KH} \cong \overline{FH}$

2.

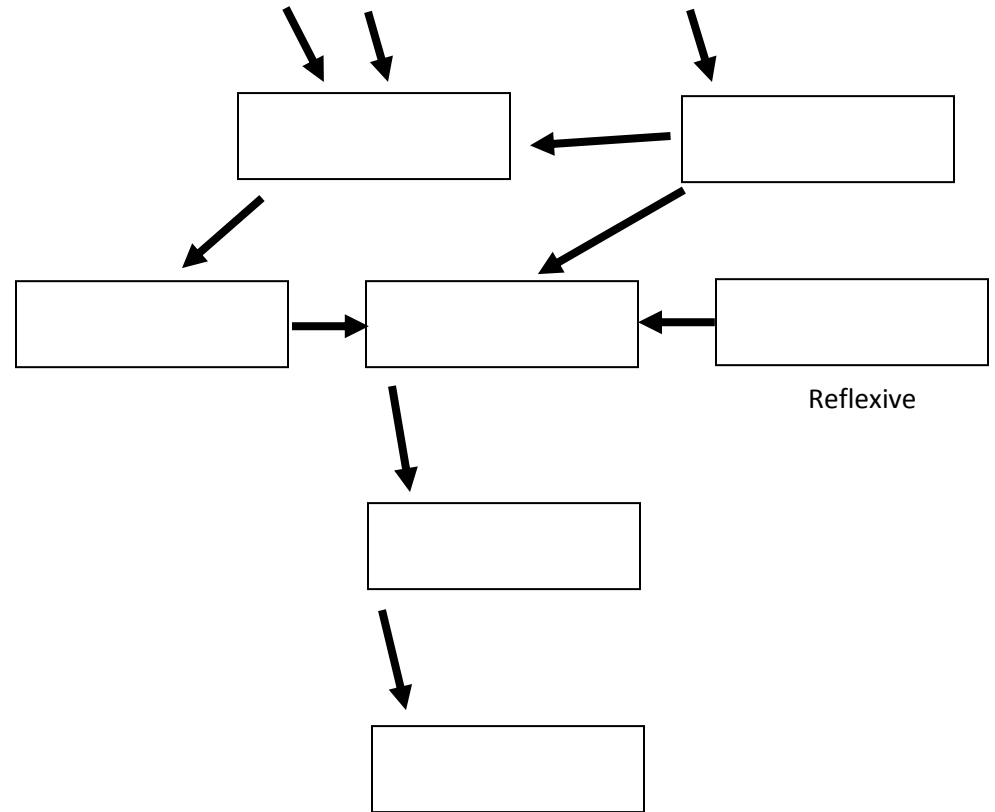Given: $\overline{RE} \cong \overline{TE}$

M is midpoint of $\overline{RT}$
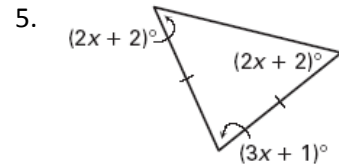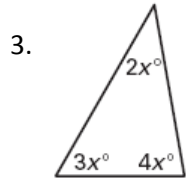
Prove: $\triangle RST$ is isosceles

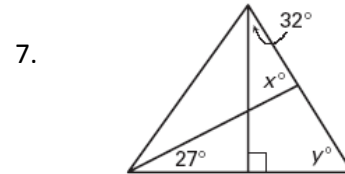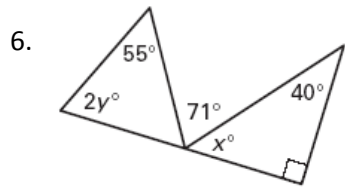| $\overline{EM} \cong \overline{EM}$	$\overline{RE} \cong \overline{TE}$	M is the midpoint of $\overline{RT}$

Reflexive

Classify the triangle by its sides. Then find the value of *x* and classify the triangle by its angles.

3.

$2x°$ $3x°$ $4x°$

5.

$(2x + 2)°$ $(2x + 2)°$ $(3x + 1)°$

9. Use the given coordinates to determine if $\triangle ABC \cong \triangle DEF$. Write a coordinate proof.

$A(1, 3)$, $B(4, 1)$, $C(5, 3)$, $D(3, -3)$, $E(6, -5)$, $F(7, -3)$

Find the value of *x* and *y*.

6.

$55°$ $2y°$ $71°$ $40°$ $x°$

7.

$32°$ $x°$ $27°$ $y°$
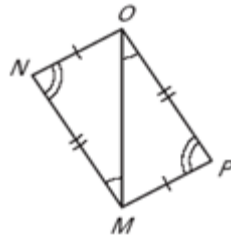
8. **GIVEN:** $\angle MNO \cong \angle OPM$, $\angle NMO \cong \angle POM$ and
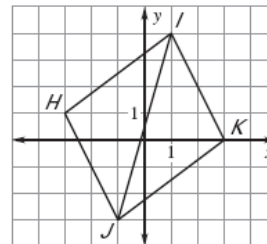$\overline{NO} \cong \overline{MP}, \overline{NM} \cong \overline{OP}$
PROVE: $\triangle NMO \cong \triangle POM$

10. Describe and correct the error in writing a congruence statement for the triangles in the coordinate plane.
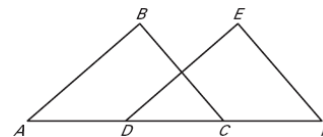

$\triangle JHI \cong \triangle JKI$

11. Find all values of *x* that make the triangles congruent. Assume lines that look parallel are parallel in this diagram.

$6x - 7$

$2x + 3$

$7x - 12$

$-x + 14$
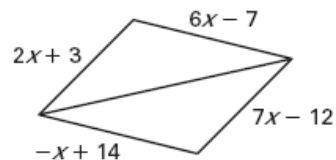
State the third congruence that must be given to prove that △*ABC* ≅ △*FED* using the indicated postulate or theorem.
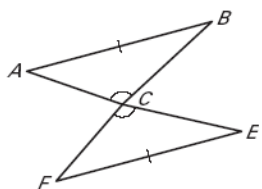
15. **GIVEN:** $\overline{BC} \cong \overline{ED}$, $\overline{AC} \cong \overline{FD}$ _____ ≅ _____   Use SAS

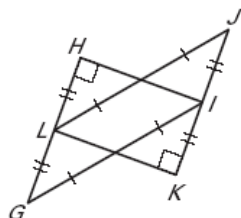16. **GIVEN:** $\overline{AB} \cong \overline{FE}$, $\overline{AC} \cong \overline{FD}$ _____ ≅ _____   Use SSS

17. **GIVEN:** $\overline{BC} \cong \overline{ED}$, ∠*B* is a right angle, _____ ≅ _____   Use HL
and ∠*B* ≅ ∠*E*

Decide whether enough information is given to prove that the triangles are congruent. If there is enough information, state the congruence postulate or theorem you would use.
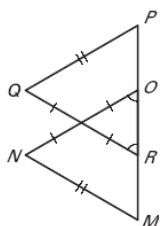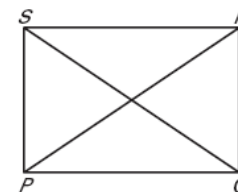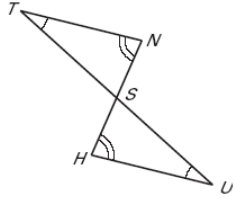
18. **GIVEN:** $\overline{QS} \cong \overline{PR}$, $\overline{PS} \perp \overline{RS}$, and $\overline{QR} \perp \overline{RS}$
PROVE: △*PRS* ≅ △*QSR*

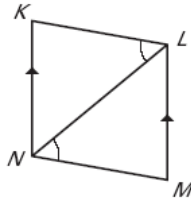12. △*ABC*, △*FEC*   13. △*GHI*, △*JKL*   14. △*MNO*, △*PQR*

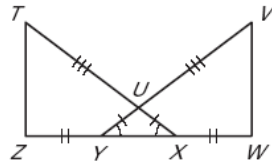**Is it possible to prove that the triangles are congruent? If so, state the postulate(s) or theorem(s) you would use.**

19. $\triangle TNS \cong \triangle UHS$

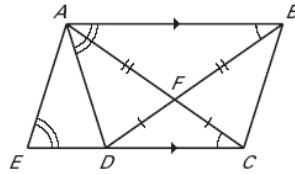20. $\triangle KLN \cong \triangle MNL$

21. $\triangle TXZ \cong \triangle VYW$

25. **GIVEN:** $\overline{BD} \perp AC$, D is the midpoint of $\overline{AC}$
    PROVE: $\angle 1 \cong \angle 2$

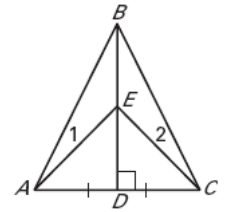**Explain how you can prove that the indicated triangles are congruent using the given postulate or theorem.**

22. $\triangle AFD \cong \triangle BFC$ by SAS
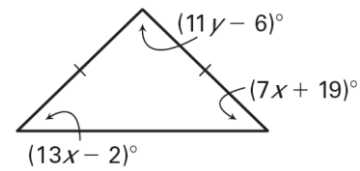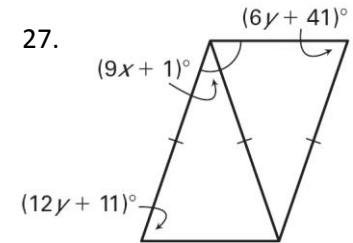
23. $\triangle ACE \cong \triangle DBA$ by AAS

24. $\triangle ACD \cong \triangle BDC$ by SAS

Find the values of x and y.

26.

$(11y - 6)°$
$(7x + 19)°$
$(13x - 2)°$

27.

$(6y + 41)°$
$(9x + 1)°$
$(12y + 11)°$

28.

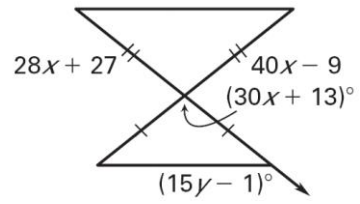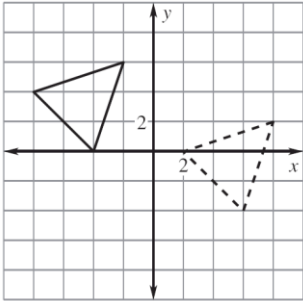$28x + 27$ $40x - 9$
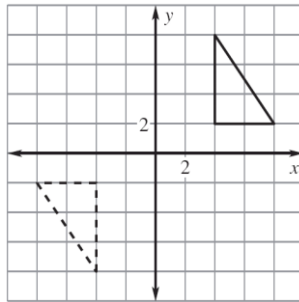$(30x + 13)°$
$(15y - 1)°$

Name the type of transformation shown.

29.

30.

31. Find the image coordinates of ABCD if the figure is reflected over the line x= 1