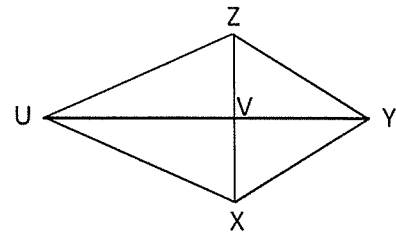


1. $\triangle ABC$ is isosceles with base \overline{BC} and altitude \overline{AD} . $BD = 3x - 10$, $DC = 5y + 7$ and $m\angle ADB = x + 2y$. Find BC .

2. Write a flow proof for each of the following.

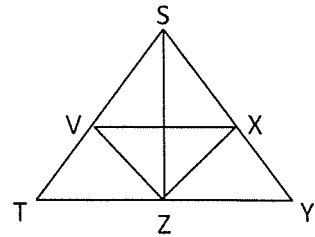
- a. Given: V is the midpoint of \overline{XZ}
 $\overline{UY} \perp \overline{XZ}$

Prove: $\angle UXY \cong \angle UZY$



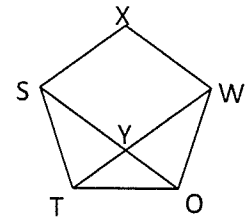
- b. Given: $\angle T \cong \angle Y$; $\angle SVZ \cong \angle SXZ$; $\overline{TV} \cong \overline{YX}$

Prove: \overline{SZ} is the median to \overline{TY}



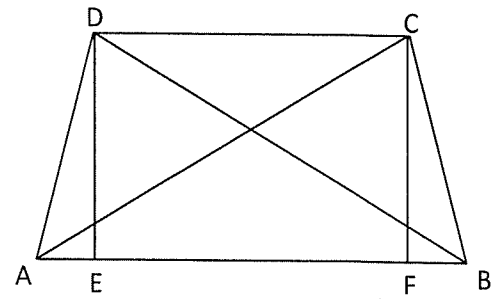
c. Given: $XSTOW$ is a regular pentagon

Prove: $\triangle TYO$ is isosceles



d. Given: \overline{DE} altitude in $\triangle ADB$
 \overline{CF} altitude in $\triangle BCA$
 $\overline{DE} \cong \overline{CF}$; $\overline{AC} \cong \overline{BD}$

Prove: $\overline{AD} \cong \overline{BC}$



3. Prove the following statement. Provide the given, prove, diagram and flow proof.

The medians drawn from the base angles of an isosceles triangle are congruent.


Given:

Diagram:

Prove:

4. $\triangle LOR$ is isosceles with vertex $\angle L$. $LO = x^2 + 5$ and $LR = 4x + 2$.
Find LO and LR .

5. $\triangle ABC$ has vertices $A(4,1)$, $B(9,1)$ and $C(1,4)$.
- Write the equation of the line containing the altitude from vertex A to \overline{BC} .
 - Find the length of the altitude.




6. $\triangle MSP$ has vertices $M(-2,-3)$, $S(4,-5)$ and $P(2,9)$. Write the equation of the median from vertex S to \overline{MP} .

7. Find the equation of the perpendicular bisector of \overline{BC} . $B(-3,6)$ and $C(1,9)$.

8. Is $\triangle ZUM \cong \triangle CAR$? Show all your work including a written explanation.

$Z(3,6)$, $U(-2,5)$, $M(-1,0)$ and $C(7,-3)$ $A(6,-8)$, $R(1,-7)$



9. Show that the following right triangles $\triangle CMT$ and $\triangle QUE$ are congruent. You may not use SSS. You must use another postulate or theorem.

$C(-9,-4)$, $M(-3,-6)$, $T(-1,0)$ and $Q(1,5)$, $U(7,3)$, $E(9,9)$

