

Quadrilaterals

Exercise 35:

Solution 1:

1. The name of the quadrilateral is LMNP.
2. The names of the vertices of the quadrilateral are L, M, N, P.
3. The names of the angles of the quadrilateral using three letters are $\angle LMN$, $\angle MNP$, $\angle NPL$, $\angle PLM$.
4. The names of the pairs of opposite sides of the quadrilateral are MN and LP, LM and PN.
5. The names of the pairs of the adjacent sides of the quadrilateral are MN and NP, NP and PL, PL and LM, LM and MN.
6. The names of the pairs of the opposite angles of the quadrilateral are $\angle LMN$ and $\angle NPL$, $\angle PLM$ and $\angle MNP$.
7. The names of the pairs of adjacent angles of the quadrilateral are $\angle LMN$ and $\angle MNP$, $\angle MNP$ and $\angle NPL$, $\angle NPL$ and $\angle PLM$, $\angle PLM$ and $\angle LMN$.
8. The names of the diagonals of the quadrilateral are MP and LN.

Exercise 36:

Solution 1:

1. Points in the interior of $\square STUV$ are A, B, and N.
2. Points in the exterior of $\square STUV$ are L and M.
3. Points on the quadrilateral are S, T, U, V, Q, P.

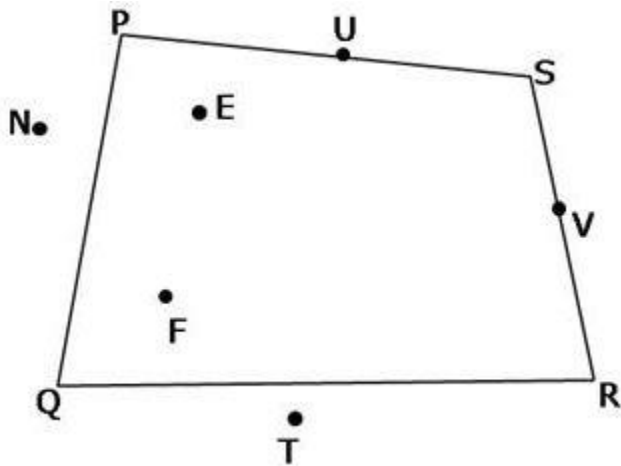
Solution 2:



Solution 3:

Given below is the quadrilateral with the given specifications:

1. Points in the interior: E and F.
2. Points in the exterior: N and T.
3. Points on the quadrilateral: U and V.



Exercise 37:

Solution 1:

1. The sum of the measures of the four angles of a quadrilateral is 360° .
 \therefore In $\square WXYZ$, $m\angle W + m\angle X + m\angle Y + m\angle Z = 360^\circ$
 $\therefore 130^\circ + 100^\circ + m\angle Y + 40^\circ = 360^\circ$
 $\therefore 270^\circ + m\angle Y = 360^\circ$
 $\therefore m\angle Y = 360^\circ - 270^\circ = 90^\circ$
2. The sum of the measures of the four angles of a quadrilateral is 360° .
 \therefore In $\square KLMN$, $m\angle K + m\angle L + m\angle M + m\angle N = 360^\circ$
 $\therefore 90^\circ + 90^\circ + 90^\circ + m\angle N = 360^\circ$
 $\therefore 270^\circ + m\angle N = 360^\circ$
 $\therefore m\angle N = 360^\circ - 270^\circ = 90^\circ$

Solution 2:

The sum of the measures of the four angles of a quadrilateral is 360° .

$$\therefore \text{In } \square PQRS, m\angle P + m\angle Q + m\angle R + m\angle S = 360^\circ$$
$$\therefore 70^\circ + 115^\circ + 75^\circ + m\angle S = 360^\circ$$

$$\therefore 260^\circ + m\angle S = 360^\circ$$

$$\therefore m\angle S = 360^\circ - 260^\circ = 100^\circ$$

Solution 3:

The sum of the measures of the four angles of a quadrilateral is 360° .

If one angle of the quadrilateral is 100° , then the sum of the remaining three angles of the quadrilateral

$$= 360^\circ - 100^\circ$$

$$= 260^\circ$$