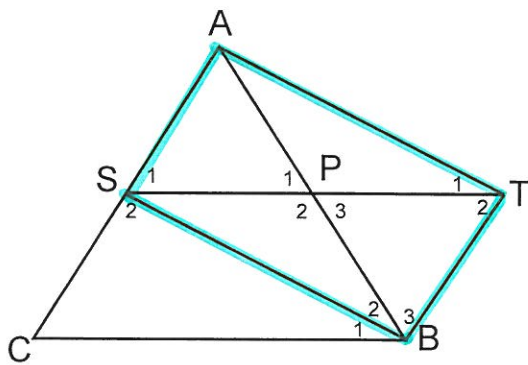


(1)



BCST is a parallelogram and
 $AS = SC$.

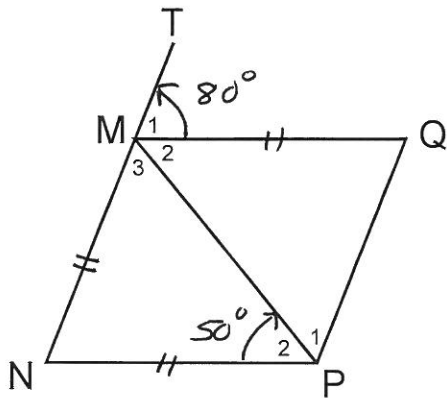
Prove that ASBT is also a parallelogram.

$$\begin{array}{ll} CS \parallel BT & [\text{app. sides parm}] \\ \therefore CSA \parallel BT & [CS \text{ extended}] \\ \therefore AS \parallel BT & \end{array}$$

but $CS = BT$ [opp. sides parm.]
and $CS = AS$ [given]
 $\therefore BT = AS$

$\therefore$ ASBT is a parallelogram, because one pair of opposite sides are equal and parallel.

(2)



In the sketch $\widehat{TMQ} = 80^\circ$ and
 $\widehat{NPM} = 50^\circ$
 $MQ = NP$ and $MN = NP$.

Prove that:

- (a) MNPQ is a parallelogram.
- (b) MNPQ is a rhombus as well.

$$(a) \quad \widehat{m}_3 = 50^\circ \quad [\angle^s \text{ opp. equal sides}]$$

$$\text{but } \widehat{m}_1 + \widehat{m}_2 + \widehat{m}_3 = 180^\circ \quad [\angle^s \text{ on str. line}]$$

$$\therefore 80^\circ + \widehat{m}_2 + 50^\circ = 180^\circ$$

$$\therefore \widehat{m}_2 = 180^\circ - 80^\circ - 50^\circ$$

$$\therefore \widehat{m}_2 = 50^\circ$$

$$\therefore \widehat{m}_2 = \widehat{p}_2 = 50^\circ$$

but these are alternate $\angle^s$

$$\therefore MQ \parallel NP$$

$\therefore$ MNPQ is a parallelogram, because
one pair of opp. sides are equal
and parallel.

$$(b) \quad MN = MQ \quad [\text{both} = NP]$$

$\therefore$ MNPQ is a rhombus, because
the adjacent sides are equal.