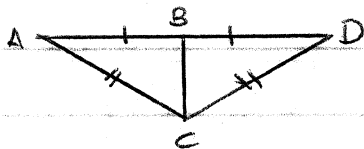


Geometry Ch 4-7, Exer. pg 259 #3-8, 10-11, 13

Tell which triangles you can show as congruent in order to prove given statement. State postulate used.

3.  $\angle A \cong \angle D$



$$\overline{AB} \cong \overline{DB}, \text{ Given}$$

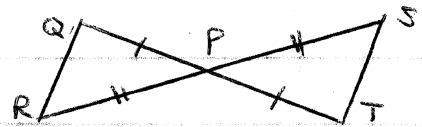
$$\overline{BC} \cong \overline{DC}, \text{ Given}$$

$$\overline{BC} \cong \overline{BC}, \text{ Reflexive}$$

$$\triangle ABC \cong \triangle DBC, \text{ S-S-S}$$

$$\angle A \cong \angle D, \text{ C.P.C.T.C.}$$

4.  $\angle Q \cong \angle T$



$$\overline{QP} \cong \overline{TP}, \text{ Given}$$

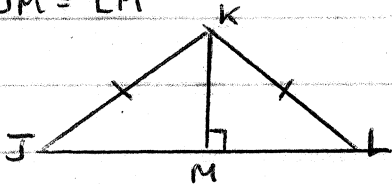
$$\overline{RP} \cong \overline{SP}, \text{ Given}$$

$$\angle QPR \cong \angle TPS, \text{ Vertical Angles}$$

$$\triangle QPR \cong \triangle TPS, \text{ S-A-S}$$

$$\angle Q \cong \angle T, \text{ C.P.C.T.C.}$$

5.  $\overline{JM} \cong \overline{LM}$



$$\overline{KM} \cong \overline{KM}, \text{ Reflexive}$$

$$\overline{JK} \cong \overline{LK}, \text{ Given}$$

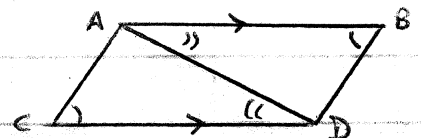
$\angle JMK$  is Right, Intersection of perp. lines

$$\angle JMK \cong \angle LMK, \text{ All Right } \angle\text{'s } \cong$$

$$\triangle JMK \cong \triangle LMK, \text{ H-L}$$

$$\overline{JM} \cong \overline{LM}, \text{ C.P.C.T.C.}$$

6.  $\overline{AC} \cong \overline{BD}$



$$\angle C \cong \angle B, \text{ Given}$$

$$\overline{AB} \parallel \overline{CD}, \text{ Given}$$

$$\angle DAB \cong \angle ADC, \text{ Alt Interior}$$

$$\overline{AD} \cong \overline{AD}, \text{ Reflexive}$$

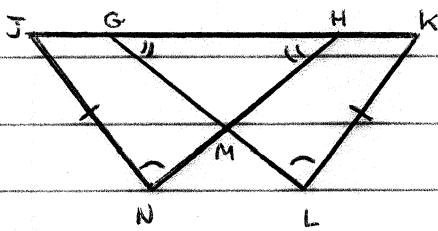
$$\triangle DAB \cong \triangle ADC, \text{ A-A-S}$$

$$\overline{AC} \cong \overline{BD}, \text{ C.P.C.T.C.}$$

[Note congruencies of S-S-A, but this is not sufficient for Triangle  $\cong$ ]

[Not A-S-A?]

7.  $\overline{GK} \cong \overline{HJ}$



$\overline{JN} \cong \overline{KL}$ , Given

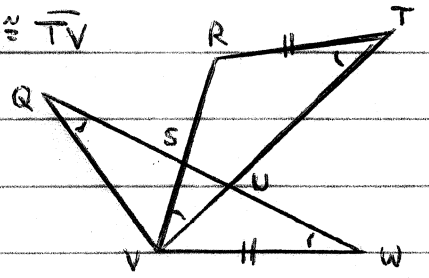
$\angle N \cong \angle L$ , Given

$\angle GHN \cong \angle HGL$ , Given

$\triangle GNL \cong \triangle HML$ , A-A-S

$\overline{GN} \cong \overline{HL}$ , C.P.C.T.C.

8.  $\overline{QW} \cong \overline{TV}$



$\overline{VW} \cong \overline{RT}$ , Given

$\angle T \cong \angle W$ , Given

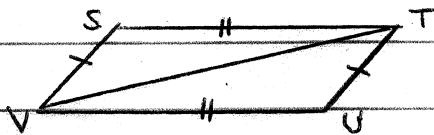
$\angle Q \cong \angle RVT$ , Given

$\triangle VWQ \cong \triangle RTV$ , A-A-S

$\overline{QW} \cong \overline{TV}$ , C.P.C.T.C.

Not as tricky as it looks

10. Prove  $\angle S \cong \angle U$



$\overline{ST} \cong \overline{UV}$ , Given

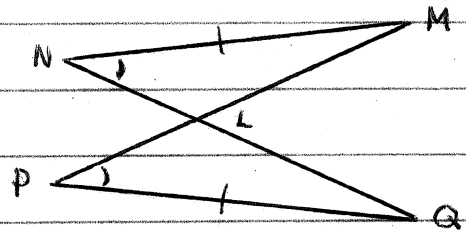
$\overline{SV} \cong \overline{UT}$ , Given

$\overline{VT} \cong \overline{VT}$ , Reflexive

$\triangle STV \cong \triangle UVT$ , S-S-S

$\angle S \cong \angle U$ , C.P.C.T.C.

ii. Prove  $\overline{LM} \cong \overline{LQ}$



$\angle N \cong \angle P$ , Given

$\overline{NM} \cong \overline{PQ}$ , Given

$\angle NLM \cong \angle PLQ$ , Vertical Angles

$\triangle NLM \cong \triangle PLQ$ , A-A-S

$\overline{LM} \cong \overline{LQ}$ , C.P.C.T.C.

13. ALGEBRA

Given  $\triangle ABC \cong \triangle DEF$  and

$$m\angle A = 70^\circ$$

$$m\angle B = 60^\circ$$

$$m\angle C = 50^\circ$$

$$m\angle D = 3x + 10^\circ$$

$$m\angle E = \frac{y}{3} + 20^\circ$$

$$m\angle F = z^2 + 14^\circ$$

Find the values of  $x$ ,  $y$ ,  $z$ .

$$\angle A \cong \angle D$$

$$70 = 3x + 10$$

$$60 = 3x$$

$$\boxed{20 = x}$$

$$\angle B \cong \angle E$$

$$60 = \frac{y}{3} + 20$$

$$40 = \frac{y}{3}$$

$$\boxed{120 = y}$$

$$\angle C = \angle F$$

$$50 = z^2 + 14$$

$$36 = z^2$$

$$\boxed{\pm 6 = z}$$