Warm Up

Suppose that $\triangle XYZ \cong \triangle RST$

1. $\overline{XY} \cong$? $\overline{RS}$

2. $\angle Z \cong$? $\angle T$

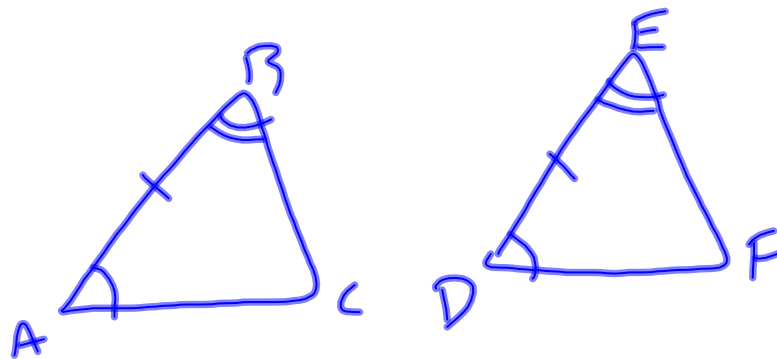3. $\angle S \cong$? $\angle Y$

4.   If $\angle A \cong \angle B$ $m\angle A = (2x+40)°$ $m\angle B = (3x-10)°$

    Find x

$$2x + 40 = 3x - 10$$
$$2x + 50 = 3x$$
$$50 = x$$

4-6   Using Congruent Triangles

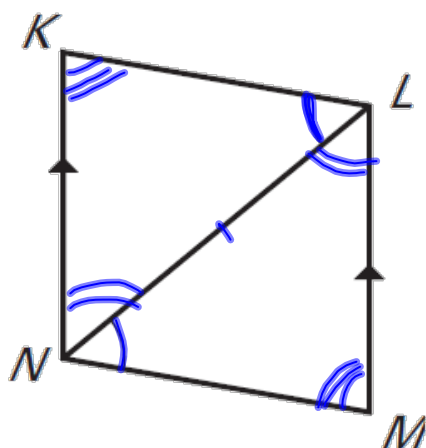CPCTC -   Corresponding Parts of Congruent Triangles are Congruent

Prove: $\angle C \cong \angle F$

Ex. 1   Tell which triangles are congruent.

Give the postulate or theorem you would use to show they are congruent.

List all congruent parts by CPCTC.

$\triangle KNL \cong \triangle MLN$

ASA

$\angle K \cong \angle M$

$\angle KLN \cong \angle MNL$

$\angle KNL \cong \angle MLN$

$\overline{NL} \cong \overline{NL}$

$\overline{KL} \cong \overline{MN}$

$\overline{KN} \cong \overline{ML}$

Ex. 2   Tell which triangles are congruent.

Give the postulate or theorem you would use to show they are congruent.

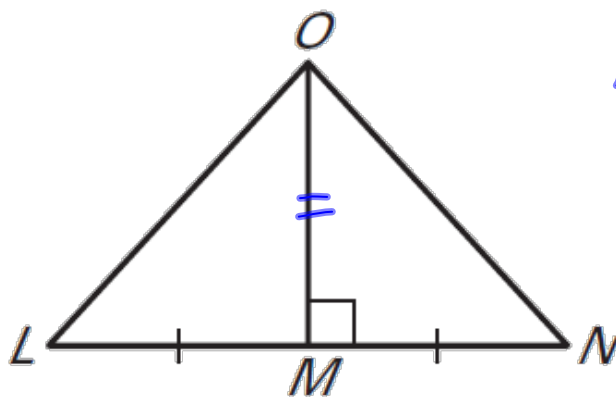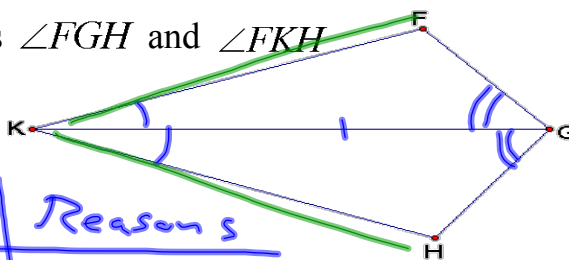List all congruent parts by CPCTC.

$\triangle NMO \cong \triangle LMO$

SAS

$\angle L \cong \angle N$

$\angle LMO \cong \angle NMO$

$\angle LOM \cong \angle NOM$

$\overline{LO} \cong \overline{NO}$

$\overline{MO} \cong \overline{MO}$

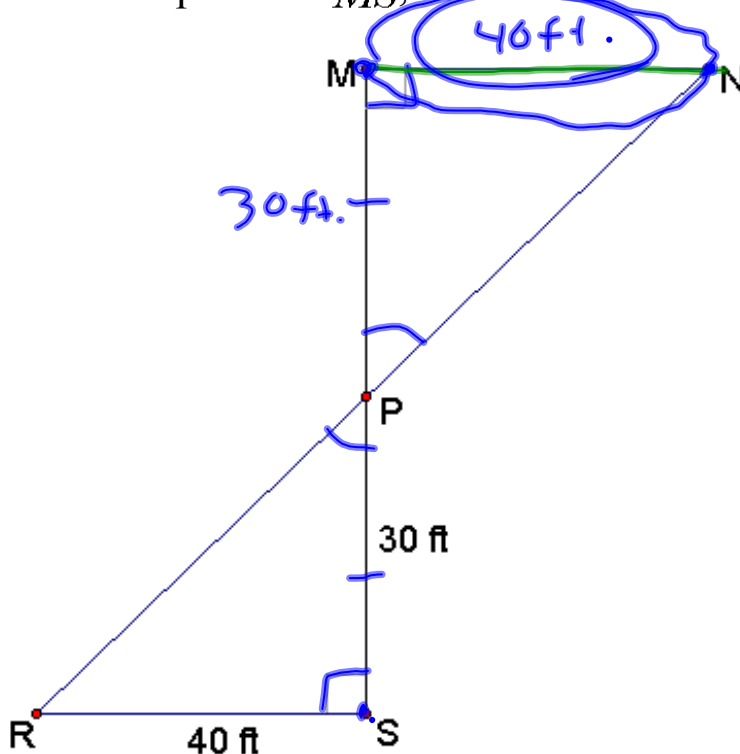$\overline{LM} \cong \overline{NM}$

Ex 3   Write a two column proof.

Given: $\overline{GK}$ bisects $\angle FGH$ and $\angle FKH$

Prove: $\overline{FK} \cong \overline{HK}$

Statements	Reasons
$\overline{GK}$ bisects $\angle FGH$ and $\angle FKH$	Given
A $\angle FKG \cong \angle HKG$ A $\angle KGF \cong \angle KGH$	Def. of bisector
S $\overline{KG} \cong \overline{KG}$	Reflexive
$\triangle KFG \cong \triangle KHG$	ASA
$\overline{FK} \cong \overline{HK}$	CPCTC

Ex 4   If P is the midpoint of $\overline{MS}$, what is the measure of $\overline{MN}$

40 ft.

30 ft.

30 ft

40 ft

Ex 5   Write a proof.

Given: $\angle 1 \cong \angle 2$ $\angle 3 \cong \angle 4$

Prove: $\triangle MNR \cong \triangle QPR$