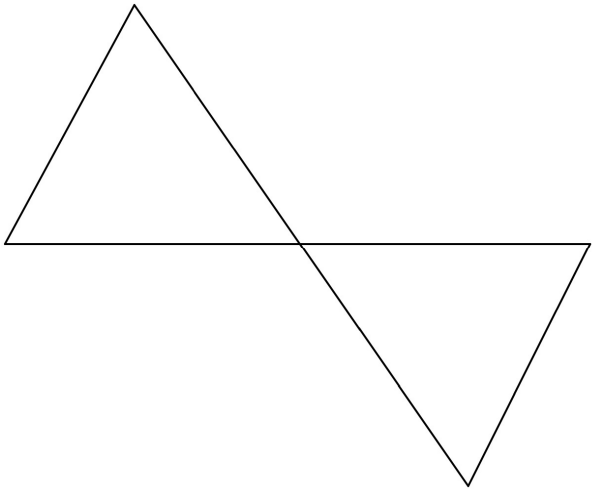
Question 1

Prove these triangles are congruent.



Question 2

Prove $\triangle BAC \cong \triangle RQS$

$\angle B = 40°$
$\angle Q = 80°$

$\overline{RQ} = 11cm$
$\overline{RS} = 14cm$

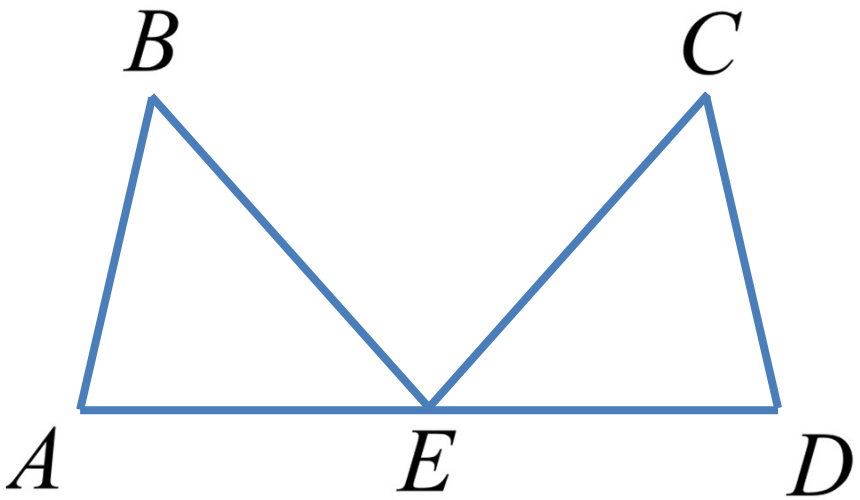
Question 3

Prove $\angle M \cong \angle O$

$\overline{MN} \cong \overline{ON}$

Question 4

Prove $\angle B \cong \angle C$



Facts

$\overline{HM}$ is parallel to $\overline{AT}$

$\overline{HA}$ bisects $\overline{MT}$ at point S

Facts

$\angle C \cong \angle S$

$\angle A = 80°$

$\overline{BC} = 14cm$

$\overline{AC} = 9cm$

Facts

Only two triangles are involved in this problem

$\overline{PN}$ is a shared side.

$\overline{PN}$ bisects $\angle ONM$

Facts

E is the midpoint of $\overline{AD}$

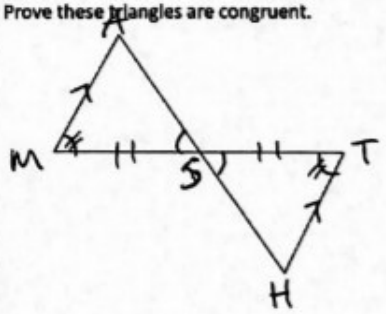
$\angle CED = 65°$

$\angle CEB = 50°$

$\overline{BE} \cong \overline{CE}$

Question 1

Prove these triangles are congruent.



Facts

$\overline{HM}$ is parallel to $\overline{AT}$

$\overline{HA}$ bisects $\overline{MT}$ at point S

S	R
$\overline{MS} \cong \overline{ST}$	def. of bisect
$\angle ASM \cong \angle TSH$	vertical angles
$\angle M \cong \angle T$	alt. interior
$\triangle AMS \cong \triangle HTS$	ASA

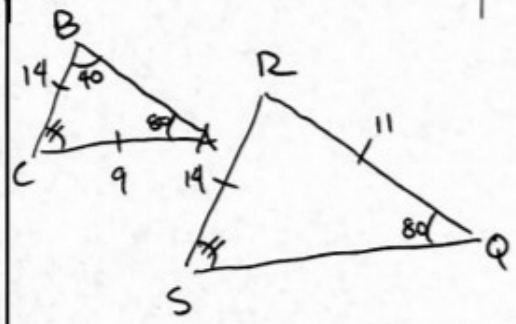
(AAS also possible)

Question 2

Prove $\triangle BAC \cong \triangle RQS$

$\angle B = 40°$
$\angle Q = 80°$

$\overline{RQ} = 11cm$
$\overline{RS} = 14cm$



Facts

$\angle C \cong \angle S$
$\angle A = 80°$

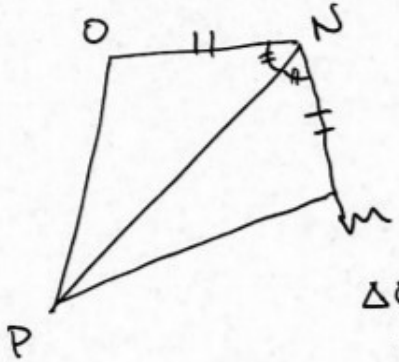
$\overline{BC} = 14cm$
$\overline{AC} = 9cm$

S	R
$\angle C \cong \angle S$	given
$\angle A \cong \angle Q$	"given"
$\overline{RS} \cong \overline{BC}$	"given"
$\triangle BAC \cong \triangle RQS$	AAS

Question 3

Prove $\angle M \cong \angle O$

$\overline{MN} \cong \overline{ON}$



Facts

Only two triangles are involved in this problem

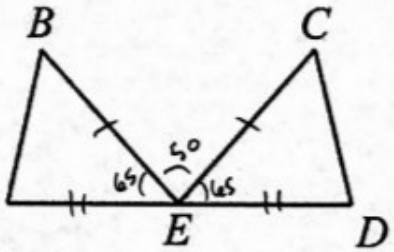
$\overline{PN}$ is a shared side.

$\overline{PN}$ bisects $\angle ONM$

S	R
$\overline{PN} \cong \overline{PN}$	shared side
$\overline{ON} \cong \overline{MN}$	given
$\angle ONP \cong \angle MNP$	def. of bisect
$\triangle ONP \cong \triangle MNP$	SAS
$\overline{MN} \cong \overline{ON}$	CPCTC

Question 4

Prove $\angle B \cong \angle C$



Facts

E is the midpoint of $\overline{AD}$

$\angle CED = 65°$
$\angle CEB = 50°$
$\overline{BE} \cong \overline{CE}$

$\overline{BE} \cong \overline{CE}$	given
$\overline{AE} \cong \overline{ED}$	def. of bisect
$\angle CED \cong \angle AEB$	Supplementary
$\triangle EBA \cong \triangle ECA$	SAS
$\angle B \cong \angle C$	CPCTC