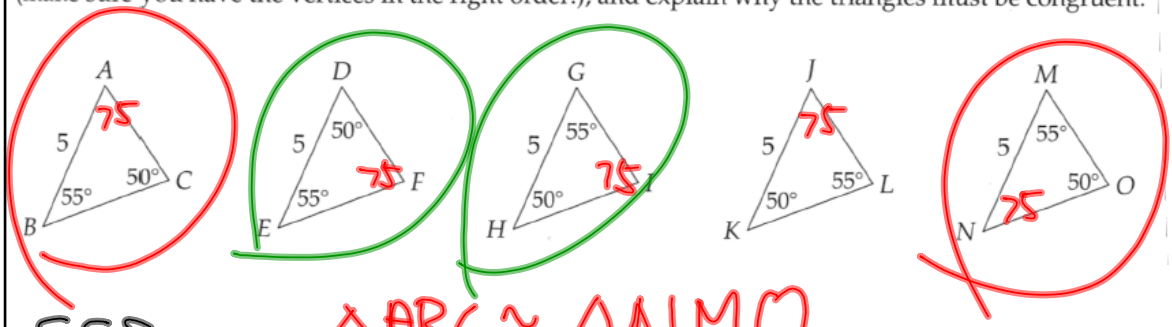
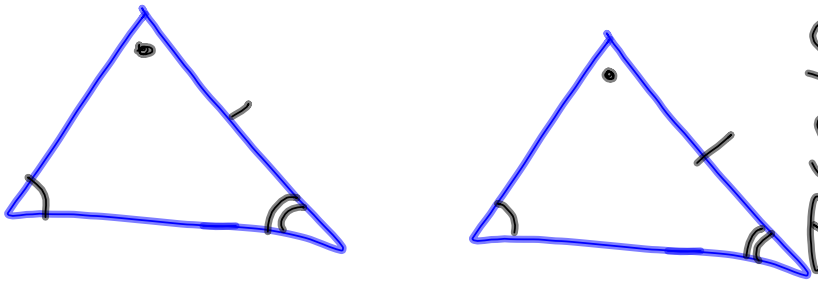
3.4.1 Find all pairs of triangles below that must be congruent. Write out the appropriate congruence (make sure you have the vertices in the right order!), and explain why the triangles must be congruent.



SSS
SAS
ASA

△ABC ≅ △NMO
△DEF ≅ △HGI

3.4.3 Use ASA Congruence to prove that AAS Congruence is a valid Congruence Theorem. (Do not assume AAS Congruence is a valid theorem for this part – you are asked here to show that any two triangles that satisfy the AAS criteria are indeed congruent *without using AAS.*) **Hin**

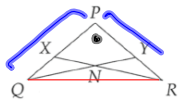


SSS
SAS
ASA
AAS

3.4.4 In the figure, $PQ = PR$ and $\angle PQY = \angle PRX$.

(a) Prove that $QY = RX$.

(b)★ Prove that $XN = YN$. **Hints:** 158, 343



S	R
① $PQ = PR$, $\angle PQY \cong \angle PRX$	Given
② $\angle P \cong \angle P$	reflexive
③ $\triangle QPY \cong \triangle RPX$	ASA
④ $QY = RX$	CPCTC
⑤ $\triangle PQR$ is an isos. $\triangle$	when 2 sides are $=$, it forms an isos. $\triangle$.
⑥ $\angle PQR \cong \angle PRQ$	In an isos. $\triangle$, base $\angle$'s are $\cong$.
⑦ $\angle YQR \cong \angle XRQ$	subtraction.
⑧ $\overline{QR} \cong \overline{QR}$	Reflexive.
⑨ $\triangle YQR \cong \triangle XRQ$	SAS