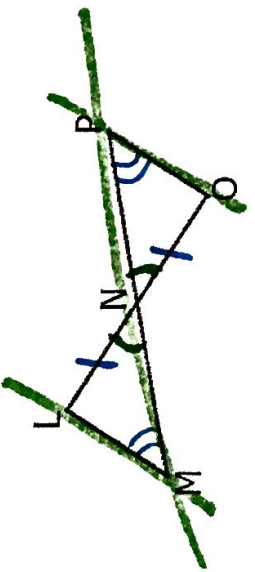


Summarizing What we KNOW... PROOFS!



Given: segment LM is parallel to PO. N is the midpoint of LO.
Are the triangles congruent?

PROOF:

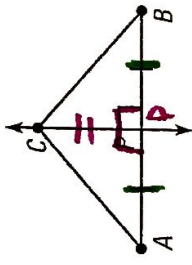
Step 1: Mark given information on the diagram.

Step 2: Mark what else you know is congruent.

Step 3: $\triangle LMN$ is congruent to $\triangle OPN$ because of SAA

Step 4: How do you know the 3 pairs of parts are congruent?
 Sides or Angles LN \cong NO are congruent because
given N is a midpoint
 Sides or Angles LM \cong OP are congruent because
parallel lines form alternate interior angles
 Sides or Angles LN \cong NO are congruent because
they are vertical angles

Summarizing What we KNOW... PROOFS!



Given CP is a perpendicular bisector of line segment AB.
Are the triangles congruent?
Are segments AC and BC congruent?

PROOF:

Step 1: Mark given information on the diagram.

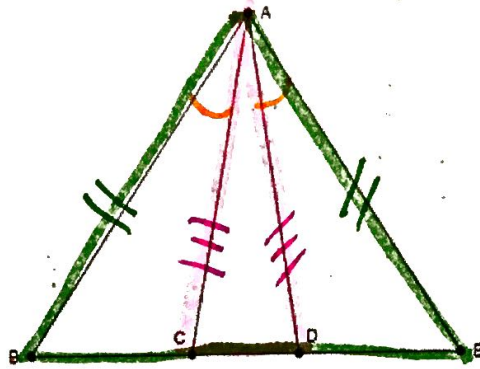
Step 2: Mark what else you know is congruent.

Step 3: $\triangle APC$ is congruent to $\triangle BPC$ because of SAS

Step 4: How do you know the 3 pairs of parts are congruent?
 Sides or Angles AP \cong PB are congruent because
of bisector of AB
 Sides or Angles CP \cong CP are congruent because
they are both right angles because CP \perp AB
 Sides or Angles CP \cong CP are congruent because
reflexive property

Once you have proven the triangles congruent, are segments AC and BC congruent?
 Why? because if whole Δ s are congruent any piece is congruent

Summarizing What we KNOW... PROOFS!



Given: $\angle BAC \cong \angle EAD$, and $\triangle ABE$ is an equilateral triangle, and $\triangle ACD$ is an isosceles triangle.

Do we have congruent triangles?

PROOF:

- $\angle BAC \cong \angle EAD$ because that is given information
 - $\overline{AB} \cong \overline{AE} \cong \overline{BE}$ because all sides of equilateral \triangle are \cong
 - $\overline{CA} \cong \overline{AD}$ because 2 sides of isosceles $\triangle \cong$
- $\triangle BAC \cong \triangle EAD$ by SAS