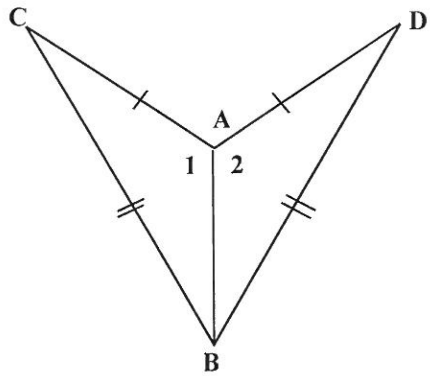
Worksheet 2015-10EK-00005(1)

(1) Prove that: $\Delta\,ABC \equiv \Delta\,ABD$



In Δ ABC and Δ ABD:

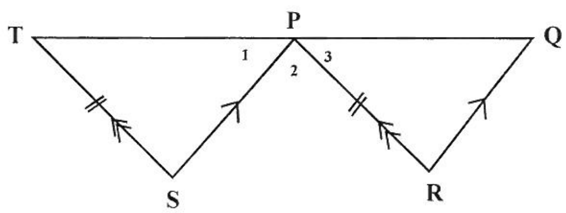
* $AB = AB$ [common side]

* $AC = AD$ [given]

* $BC = BD$ ["]

$\therefore \Delta ABC \equiv \Delta ABD$ [sss]

(2) Prove that: $\Delta\,TSP \equiv \Delta\,PQR$



In Δ TSP and Δ PQR:

* $TS = PR$ [given]

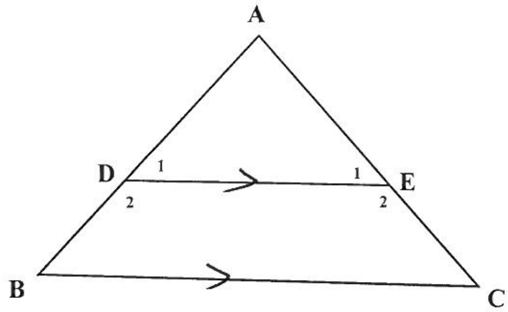
* $\hat{T} = \hat{P}_3$ [corresp. $\angle^s$; $TS \parallel PR$]

* $\hat{P}_1 = \hat{Q}$ [" ; $PS \parallel QR$]

$\therefore \Delta TSP \equiv \Delta PRQ$ [S∠∠]

(3) DE // BC. Prove that: (a) Δ ABC /// ΔADE

(b) AB . DE = AD . BC



(a) In Δ ABC and Δ ADE:

* $\hat{A} = \hat{A}$ [common ∠]

* $\hat{B} = \hat{D}_1$ [corresp. ∠^{s}; DE // BC]

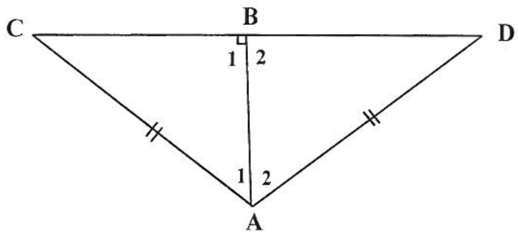
* $\hat{C} = \hat{E}_1$ ["]

∴ Δ ABC /// Δ ADE [∠∠∠]

(b) $\frac{AB}{AD} = \frac{BC}{DE} = \frac{BC}{DE}$ [Δ ABC /// Δ ADE]

∴ AB. DE = AD. BC

(4) Prove that: Δ ABC ≡ Δ ABD



In Δ ABC and Δ ABD:

* $\hat{B}_1 = \hat{B}_2$ [both 90°]

* AB = AB [common side]

* AC = AD [given]

∴ Δ ABC ≡ Δ ABD [90°; h; s]