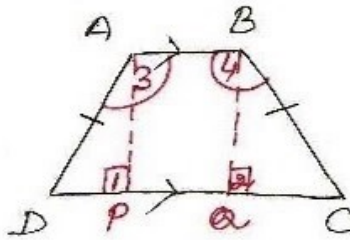
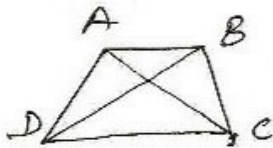


ex 8.1

(12)



const - draw  $AP \perp DC$ ,  $BQ \perp DC$

Proof - (i) In  $\triangle DPA$  and  $\triangle CQB$

$$\angle 1 = \angle 2 = 90^\circ$$

$$AD = BC \text{ (given)}$$

$$AP = BQ \text{ (distance between parallel lines)}$$

$\therefore \triangle DPA \cong \triangle CQB$  by RHS prop

$$\angle D = \angle C \text{ (cpct)}$$

(ii)

$$AB \parallel DC$$

$$\angle D + \angle 3 = 180^\circ \dots \textcircled{i} \quad [\text{Co. in LS}]$$

$$\angle C + \angle 4 = 180^\circ \dots \textcircled{ii}$$

From  $\textcircled{i}, \textcircled{ii}$

$$\cancel{\angle D} + \angle 3 = \cancel{\angle C} + \angle 4 \quad [\because \angle D = \angle C]$$

$$\Rightarrow \angle A = \angle B$$

(iii) In  $\triangle ABC$  and  $\triangle BAD$

$$AB = BA \text{ (common)}$$

$$\angle 3 = \angle 4 \text{ (proved)}$$

$$BC = AD \text{ (given)}$$

$\therefore \triangle ABC \cong \triangle BAD$  by SAS prop.

(iv)

$$AC = BD \text{ (cpct)}$$