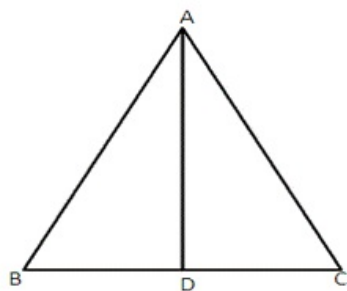Exercise 5A

Question 24:
Given : ABC is an isosceles triangle in which AB = AC and
AD is the median through A.

To prove: ∠BAD =∠DAC
Proof: In ∆ABD and ∆ADC
              AB =AC   [Given]
              BD =DC   [Given]
              AD = AD   [Common]
Thus by Side-Side-Side criterion of congruence, we have
          ∆ABD ≅ ∆ADC   [By SSS]
The corresponding parts of the congruent triangles are equal.
∴   ∠BAD = ∠DAC   (Proved)

Question 25:
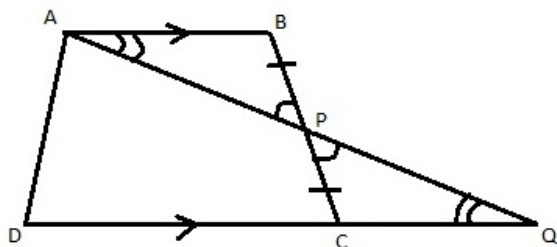
Given ABCD is a quadrilateral in which AB || DC
To Prove: (i)   AB =CQ
(ii)   DQ= DC+AB
Proof: In ∆ABP and ∆PCQ we have
          ∠PAB =∠PQC   [alternate angles]
          ∠APB =∠CPQ   [Vertically opposite angles]
          BP = PC   [Given]
Thus by Angle-Angle-Side criterion of congruence, we have
          ∆ABP ≅ ∆PCQ
The corresponding parts of the congruent triangles are equal
∴   AB =CQ   .....(1)
Now,   DQ = DC + CQ
           = DC + AB   [from (1)]

*********** END **********