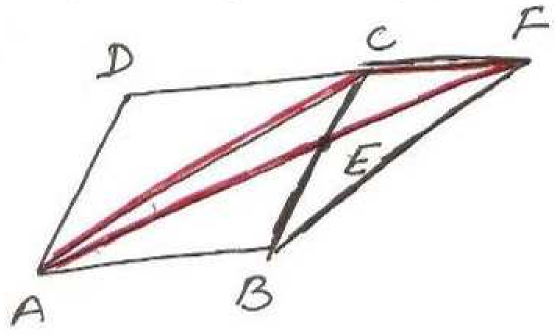
(1)



given - In figure ABCD is a ||gm

to prove ar(ADF) = ar(ABFC)

proof

ar(△ACF) = ar(△BCF) ... (I) [△s on same base and between same || lines]

ar(△ACD) = ar △ACB) ... (II) [diagonal divides a △ into 2 △s equal in area]

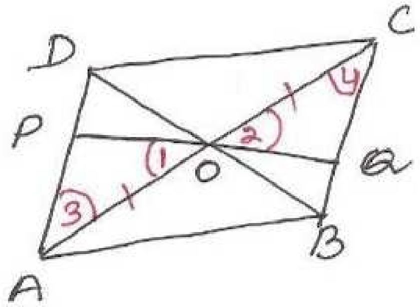
(I) + (II)

ar(△ACF) + ar(△ACD) = ar(△BCF) + ar(△ACB)

⇒ ar(△ADF) = ar(□ABFC)

NCERT Exemplar Sols by Dev Anoop (Bathinda)

(2)



given - □ABCD is a ||gm

to prove - ar(DPQC) = ar(□APQB)

proof AD || BC (opp. sides of ||gm)

∠3 = ∠4 (alternate in. ∠s)

In △AOP and △COQ

∠1 = ∠2 (ver. opp. ∠s)

OA = OC (diagonals of ||gm bisect each other)

∠3 = ∠4 (proved)

∴ △AOP ≅ △COQ by ASA prop.

⇒ ar(△AOP) = ar(△COQ) ... (I)