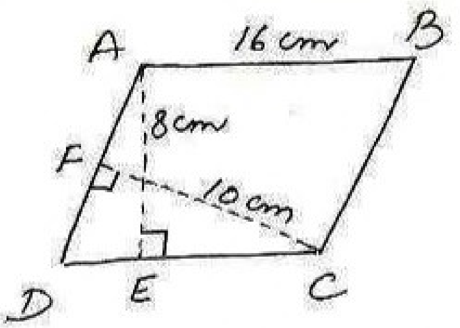
ex 9.2

(1)



ar(∥gm ABCD) = ar(∥gm ABCD)

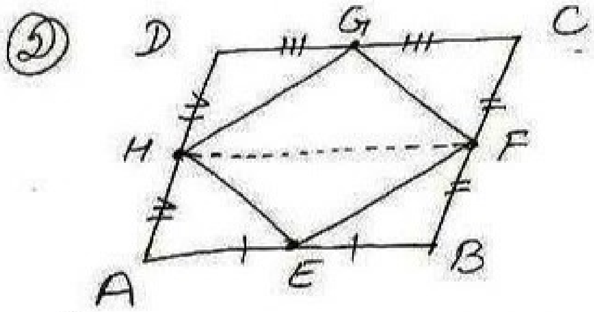
$DC \times AE = AD \times CF$

$16 \times 8 = AD \times 10$ [DC = AB = 16cm opp sides of ∥gm]

$\Rightarrow AD = \dfrac{16 \times 8}{10}$

$= 12.8$ cm

(2)



To prove ar(EFGH) = $\frac{1}{2}$ar(ABCD)

Const - join HF

Proof AD ∥ BC [opp sides of ∥gm]

$\Rightarrow$ AH ∥ BF

AD = BC [do]

2AH = 2BF [H is midpt AD, F is midpt of BC]

$\Rightarrow$ AH = BF

□ABFH is a ∥gm [AH ∥ BF, AH = BF]

Similarly HFCD is a ∥gm

ar(△EHF) = $\frac{1}{2}$ ar(∥gm ABFH) ... (i)

[△ and ∥gm on same base and between same ∥ lines]

ar(△GHF) = $\frac{1}{2}$ ar(∥gm HFCD) ... (ii)

[do]

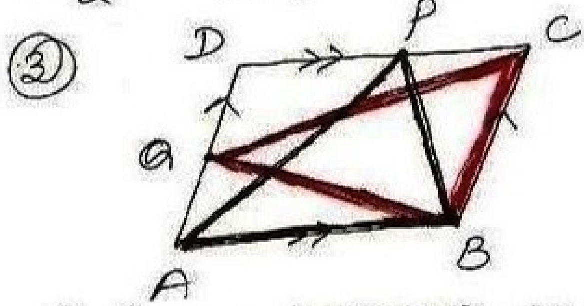
(i) + (ii)

ar(△EHF) + ar(△GHF)

$= \frac{1}{2}$ [ar ∥gm ABFH + ar ∥gm HFCD]

$= \frac{1}{2}$ ar(∥gm ABCD)

(3)



To prove ar(APB) = ar(BQC)

Proof

ar(△APB) = $\frac{1}{2}$ar(∥gm ABCD) ... (i)

[△ and ∥gm on same base and between same ∥ lines]

ar(△BQC) = $\frac{1}{2}$ar(∥gm ABCD) ... (ii)

From (i) and (ii)

ar(△APB) = ar(△BQC)