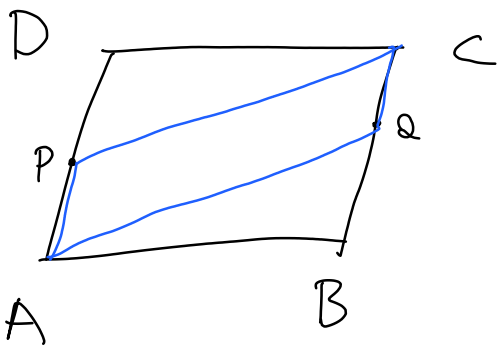
1102-MAT

Saturday, 2 November 2024 2:44 PM



TO PROVE: $APCQ$

$AP = \frac{1}{3} AD$

$CQ = \frac{1}{3} BC$

(1) GIVEN:

$AD = BC$

$\frac{1}{3} AD = \frac{1}{3} BC$

$AP = CQ$

$AB = DC$

$DP = QB$

$\angle B = \angle D$

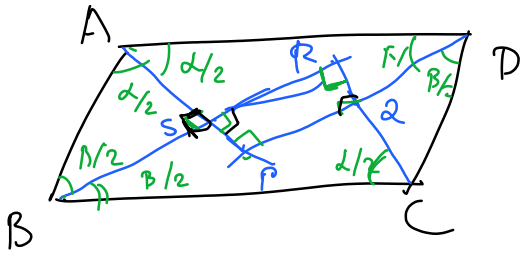
↓

From Similar triangles:

$DP = AQ$

HENCE $APCQ$ is parallelogram

P16 15



$\Rightarrow$ Rectangle / Parallelogram

$\Rightarrow$

$BRC \rightarrow$ Rt-angle trig

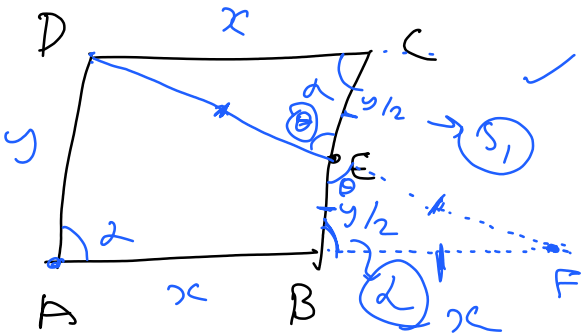
$APQ \Rightarrow$ Rt-angle trig

$\frac{\alpha}{2} + \frac{\beta}{2} = 90 \Rightarrow$ ABS (Rt)

$\angle S = 90$

$\alpha + \beta = 180$

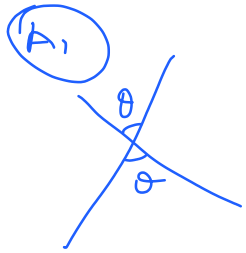
P16 $\rightarrow$

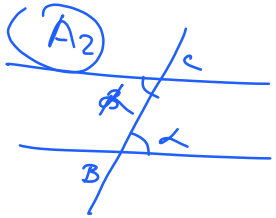


✓ ABCD $\rightarrow$ parallelogram

✓ $\in \rightarrow$ mp

$AF = 2AB$





A

$\rightarrow \in \rightarrow$ mp of DF ✓

$\rightarrow$ AD ∥ BC ✓

BF = x

ASA

$\triangle EBF \sim \triangle DEC$

$AC = AB + BC$

$= 2x + x$

$AC = 2x$

P17

ILLUSTRATION (6)

SOLVED PROD – A (18)

SOLVED PROB → B (5)

OBJ - L1 (12)

OBS - L2 (4)

OBS - L3 (4)

OBJ - L4 (3)

CPP
S-1 (20)
S-2 (10)

ASS (A) – 32

ASS (B) – 34

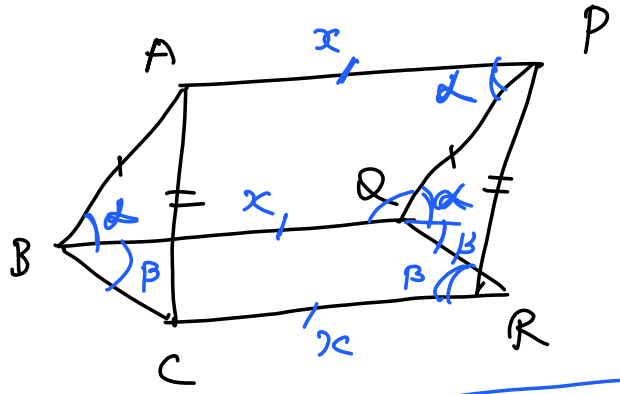
ASS (C) – 10

L2 → ~~10~~ 15

L3 → 12

L1 → 23

p17



p17 ①

AB ∥ PQ
AB = PQ

AC ∥ PR
AC = PR

ABQP + ACPR → BCQR

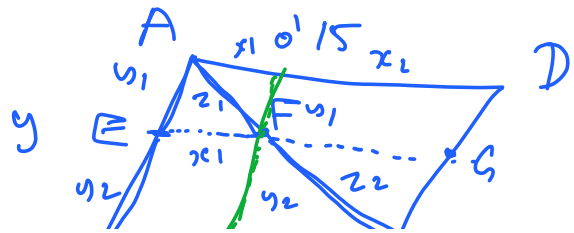
BC ∥ QR & BC = QR

∠ABC = α + β
∠PQR = α + β
→ A

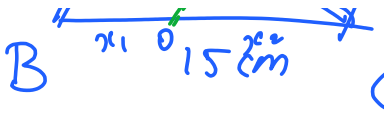
AB = PQ (S)
AC = PR (S)
→ BC ∥ QR

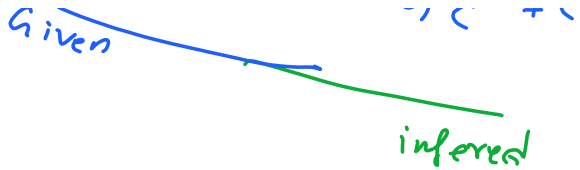
⇒ BC = QR
BC ∥ QR

p18

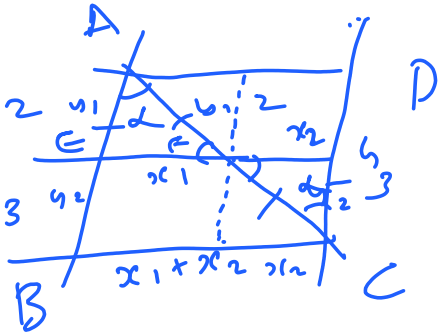


$\frac{AE}{EB} = \frac{2}{3} = \frac{DG}{GC} = \frac{AF}{FC}$





EF and FG ⇒ $\boxed{FG - EF = ?}$ EG ∥ BC



$\frac{z_1}{z_2} = \frac{y_1}{y_2} \Rightarrow \frac{2}{3}$

$\triangle AEF \sim \triangle CFG \Rightarrow \frac{x_1}{x_2} = \frac{2}{3}$

(A) (S) (S)

$\frac{y_1}{y_2} = \frac{z_1}{z_2} \Rightarrow$

$x_1 + x_2 = 15$

$\frac{x_1}{x_2} = \frac{2}{3}$

$x_2 - x_1 = ?$

$3x_1$

$2x_2 = 3x_1$

$$x_2 = \frac{3}{2} x_1$$

$$x_1 + \frac{3}{2} x_1 = 15$$

$$x_1 \left(1 + \frac{3}{2}\right) = 15$$

$$x_1 \left(\frac{2+3}{2}\right) = 15$$

$$x_1 = \frac{2 \times 15}{5} 3$$

$$x_1 = 6$$

$$x_2 = 15 - 6$$

$$= 9$$

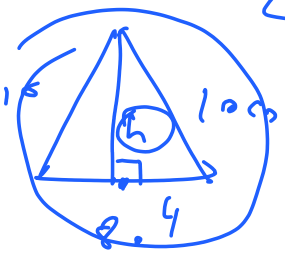
$$x_2 - x_1 = 9 - 6$$

$$= 3 \text{ cm}$$

Sec - D

P1 P2 P3 P4 P5

P1 ✓

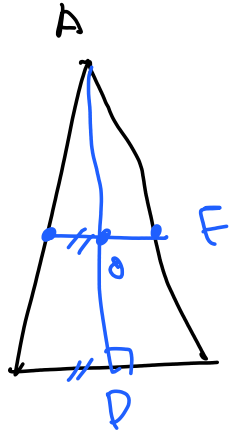


$\Rightarrow AE = AF$

AD

$\angle 90$

$ED = DF$



✓ $AB = AC$

✓ E → mp of AB

F → mp of AC

AEF

C

Iso Δle ✓

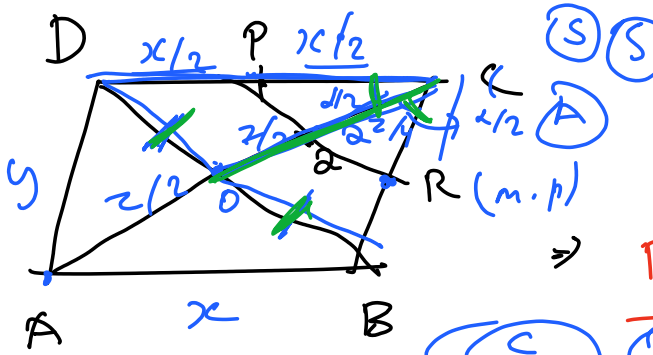
AD ⊥ EF and AD bisected EF

✓ * Iso → AD → median (& m.p) ⇒ AD ⊥ BC (1)

✓ E and F are mpts of AB and AC ⇒ EF ∥ BC (2)

AD ⊥ EF

P2



AC = 2

(S) (S)

(A)

$CQ = \frac{1}{4} AC$

$CQ = \frac{1}{4} 2$ ∴ Q → m.p of C

⇒ R → m.p of BC

$\frac{CR}{RB} = \frac{x/2}{x/2} = 1$ ⇒ R . m.p

$\frac{CP}{PD} = \frac{\frac{2}{2}}{2} = \frac{2}{4}$

$\triangle COD \cong \triangle COB$

SAS ⇒ } ⇒

H.W ⇒ S(B) ① ② (138, 139)

S(A) 17, 18, 16, 1 (136, 137)

5 problems

next class → pg: 189 onwards.