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T1 P is the mid Point of AB

$\therefore AP = BP$

$\angle EPA = \angle DPB$ [Given]

$\angle EPA + \angle EPD = \angle DPB + \angle EPD \Rightarrow \angle APD = \angle EPB$

(i) Now,

$AP = BP$

$\angle EPA = \angle DPB$ [Given

$\angle APD = \angle EPB$

$\therefore \triangle DAP \cong \triangle EBP$ (ASA) rule of congruence

(ii) Then,

$AD = BE$ (CPCT)

Q4. Given

5 NoteBooks and 3 Pens = 190 ₹

3 Note Books and 2 Pens = 118 ₹

Let us take notebooks = (n)

Pens = (P)

So,

$5n + 3P = 190 \rightarrow$ equ ①

$3n + 2P = 118 \rightarrow$ equ ②

Now,

multiply equ ① with 2 on both sides & multiply equ ② with 3 on both sides so that Components of P become equal.

equ ① × ② $[5n + 3P] = (2)[190]$

$= 10n + 6P = 380$

equ ② × (3) $(3n + 2P) = (3)(118)$

$= 9n + 6P = 354$

Now, eqn① - eqn②

$\Rightarrow (10n + 6P) - (9n + 6P) = 380 - 354$
$\Rightarrow 10n + 6P - 9n - 6P = 26$
$\Rightarrow n = 26$

Then,
Substituting $n = 26$ in eqn①

$5(n) + 3(P) = 190$
$5(26) + 3P = 190$
$130 + 3P = 190$
$3P = 190 - 130$
$3P = 60$
$P = \frac{60}{3}$

$P = 20$

∴ Value of a note book = 26 ₹
Value of a Pen = 20 ₹

Q3. Let the cost of 1 apple = A
1 Orange = O
We are given two equations
1. $15A + 10O = 290$ → eqn①
2. $12A + 18O = 324$ → eqn②

Now,
Divide equation 2 by 2
$6A + 9O = 162$

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Now,
Multiply this equation to eliminate variables,
To eliminate A, make coefficients of A same:
Multiply simplified 2 by 5
$30A + 45\theta = 810$
Multiply equation 1 by 2
$30A + 20\theta = 580$
Then,
Subtract,
$(30A + 45\theta) - (30A + 20\theta)$
$\Rightarrow 25\theta = 230$
Now,
Solve for θ
$\theta = \frac{230}{25} = 9.2$
Then, substitute back to find A
Use equation (1):
$15A + 10(9.2) = 290$
$15A + 92 = 290$
$15A = 198$
$A = \frac{198}{15} = 13.2$
∴ Final Answer * 1 Apple = 13.2 ₹
* 1 Orange = 9.2 ₹

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T2 G5

STEP:1

Proof of (i) $\Delta ABD \cong \Delta ACD$

We consider the triangles ΔABD and ΔACD

1. AB = AC (Given)
2. OB = OC (Given)
3. AD = AD (common side to both triangles)

Since,

$\Delta ABD \cong \Delta ACD$

STEP2:-

Proof of (ii) $\Delta ABP \cong \Delta ACP$

Now, we consider the triangles ΔABP and ΔACP

1. AB = AC (Given)
2. $\angle BAP = \angle CAP$ C
3. AP = AP (common)

$\therefore \Delta ABP \cong \Delta ACP$