

**Exam by SmartLearners.ai**

**Class 9 – Mathematics Question Paper**

Maximum Time: 30 Minutes

Each Question Carries 5 Marks

**Q1 (5 Marks)**

Two taps A and B fill a tank. Tap A takes 4 hours more than the time both taps take together; Tap B takes 9 hours more. The tank is filled by running A alone for  $x$  hours and B alone for  $y$  hours. Given  $y = 2x + 1$ , find the time taken by each tap alone and the values of  $x$  and  $y$ .

**Q2 (5 Marks)**

A father and his son have  $x$  and  $y$  coins. If the father gives the son 18, the son has twice as many as the father. If the son gives the father 12, the father has three times the son. Find  $x$  and  $y$ .

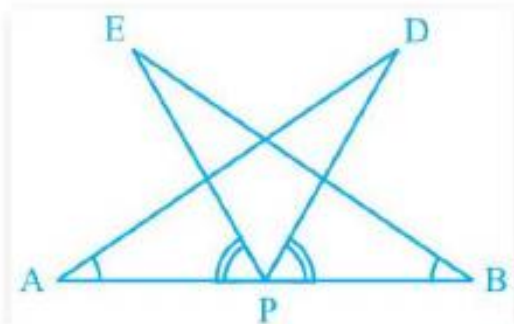
**Q3 (5 Marks)**

A fruit seller sells 15 apples and 10 oranges for ₹290, and 12 apples and 18 oranges for ₹324. If the cost of an apple is ₹ $x$  and an orange is ₹ $y$ , find  $x$  and  $y$ .

**Q4 (5 Marks)**

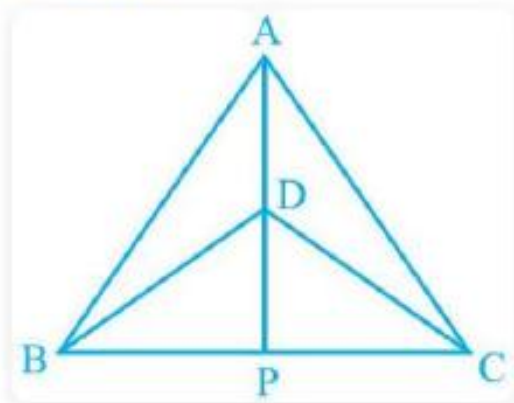
A man buys 5 notebooks and 3 pens for ₹190. On another day he buys 3 notebooks and 2 pens for ₹118. If a notebook costs ₹ $x$  and a pen costs ₹ $y$ , find  $x$  and  $y$ .

**T1 (5 Marks)**



AB is a line segment and P is its mid-point. D and E lie on the same side of AB such that  $\angle BAD = \angle ABE$  and  $\angle EPA = \angle DPB$ . Show that (i)  $\triangle DAP \cong \triangle EBP$  (ii)  $AD = BE$ .

**T2 (5 Marks)**

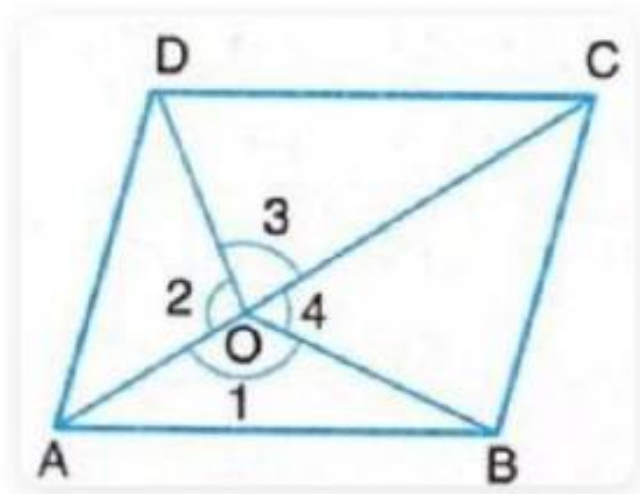


$\triangle ABC$  and  $\triangle DBC$  are isosceles triangles on the same base BC with A and D on the same side. AD meets BC at P. Show that (i)  $\triangle ABD \cong \triangle ACD$  (ii)  $\triangle ABP \cong \triangle ACP$  (iii) AP bisects  $\angle A$  and  $\angle D$  (iv) AP is the perpendicular bisector of BC.

**T3 (5 Marks)**

Bisectors of  $\angle B$  and  $\angle C$  of isosceles triangle ABC ( $AB = AC$ ) meet at O. Show that the external angle adjacent to  $\angle ABC$  equals  $\angle BOC$ .

T4 (5 Marks)



A point O is inside an equilateral quadrilateral ABCD such that  $OD = OB$ . Show that AO and OC lie on the same straight line.

T5 (5 Marks)

In  $\triangle PQR$ ,  $PQ = QR$  and L, M, N are mid-points of PQ, QR and RP respectively. Prove that  $LN = MN$ .