

# VAISHALI EDUCATION POINT

(QUALITY EDUCATION PROVIDER)

BY PROF. RAHUL MISHRA

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## INTRODUCTION TO EUCLIDS GEOMETRY

Class :- IX

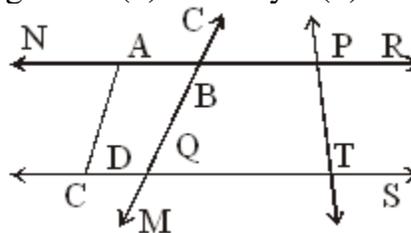
Subject :- Math

### General Instructions

QNo.

Questions

- 1 If B lies between A and C,  $AC = 15$  cm and  $BC = 9$  cm. What is AB in cm.
- 2 What will be the angle between the hands of clock at (i) 6 A.M (ii) 9 P.M
- 3 An angle is  $16^\circ$  more than its complement. Find the angle
- 4 P lies in the interior of  $\angle BAC$ , If  $\angle BAC = 70^\circ$  and  $\angle BAP = 42^\circ$  find  $\angle PAC$
- 5 Define angle, vertex, arms of an angle, congruent lines.
- 6 In the fig. name the following (1) Five line segments (2) Five rays. (3) Four collinear



points (4) Two pairs of non-intersecting lines.

- 7 In supplementary angles one is twice the other. Find the angles.
- 8 The complementary to following angles. (i)  $32^\circ$  (ii)  $53^\circ$  (iii)  $35^\circ$  (iv)  $85^\circ$
- 9 The difference between supplementary angles is equal to one right angle. Find angles.
- 10 In figure, it is given that  $AD = BC$ . By which Euclid's axiom it can be proved that  $AC = BD$ ?



- 11 Does Euclid's fifth postulate imply the existence of parallel lines? Explain.



In the above figure, if  $AB = PQ$ ,  $PQ = XY$ , then  $AB = XY$ . State True or False. Justify your answer.

- 13 If C is the mid-point of the line segment AB, L and M are mid-points of the line segment AC and BC respectively. Prove that

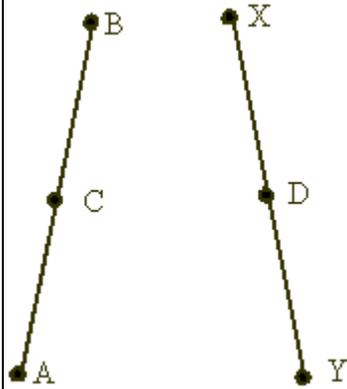
$$AL = LC = CM = MB = \frac{1}{4} AB.$$

Also, state which Euclid's axiom is applied for proving result.

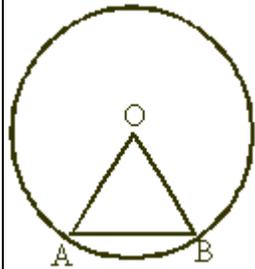
- 14 Point C is called a mid-point of line segment AB. Prove that every line segment has

one and only one mid-point.

- 15 In the given figure,  $AC = XD$ , C is mid-point of AB and D is mid-point of XY. Using an Euclid's axiom, show that  $AB = XY$ .

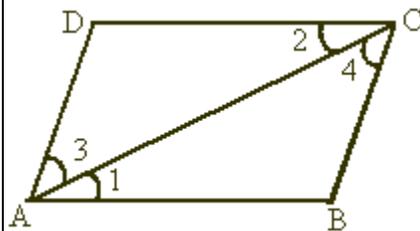


- 16 In the given figure, O is the centre of the circle and chord AB is equal to the radius of the circle. By which Euclid's axiom it can be proved that DOAB is an equilateral triangle?



- 17 Define (i) a square (ii) perpendicular line.

- 18 In the given figure, it is given that  $\angle 1 = \angle 4$  and  $\angle 3 = \angle 2$ . By which Euclid's axiom, it can be shown, if  $\angle 2 = \angle 4$  then  $\angle 1 = \angle 3$ .



- 19 In the given figure, if Q is mid-point of PR and R is mid-point of QS, then show that

$$PQ = QR = RS = \frac{1}{3}PS.$$



Also, state which Euclid's axiom is applied to prove the result.

- 20 State five postulates of Euclid.

- 21 What is the relation between axiom and theorem?

- 22 If A, B and C are three points on a line and B lies between A and C, then prove that

$AB + BC = AC.$

23

If a point C is the mid-point of a line segment AB, then prove that  $AC = BC = \frac{1}{2} AB.$

24

If C and D are the mid-points of the line segments AE and BE respectively, then prove that E is the mid-point of line segment AB.

25

We know that if  $x = y$ , then  $x + z = y + z$ . Which of Euclid's axiom illustrates this statement?

26

If B lies between A and C,  $AC = 15$  cm and  $BC = 9$  cm. What is AB in cm.

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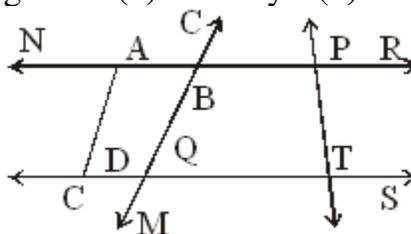
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In the above figure, if  $AB = PQ$ ,  $PQ = XY$ , then  $AB = XY$ . State True or False. Justify your answer.

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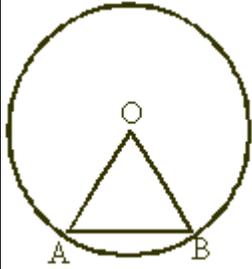
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Point C is called a mid-point of line segment AB. Prove that every line segment has one and only one mid-point.

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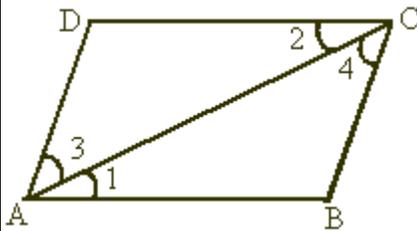
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