

INTERNATIONAL INDIAN SCHOOL- RIYADH

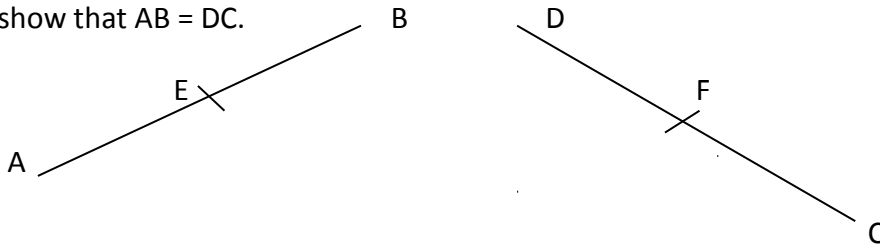
WORK SHEET- FIRST TERM (2015- 2016)

Class : IX

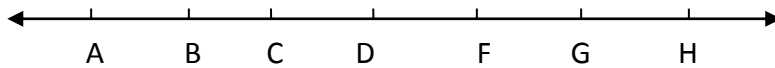
Subject : Mathematics

Chapter-5: INTRODUCTION TO EUCLID'S GEOMETRY

1. Define the following terms with diagrams.
 - a. Collinear points
 - b. Point of intersection
 - c. Radius of a circle
 - d. Concurrent lines.
2. If X,Y and Z are three points on a line , and Y lies between X and Z, prove that $XY + YZ = XZ$
3. If Q is the midpoint of the line segment AB and P is the midpoint of AQ, show that $PQ = \frac{1}{4} AB$.
4. Prove that an equilateral triangle can be constructed on any given line segment.
5. Write any five axioms and any three postulates of Euclid.
6. Write the difference between 'postulate' and 'axiom'.
7. In the fig. $AE = DF$, E is the midpoint of AB and F is the midpoint of DC. Using a Euclid's axiom, show that $AB = DC$.



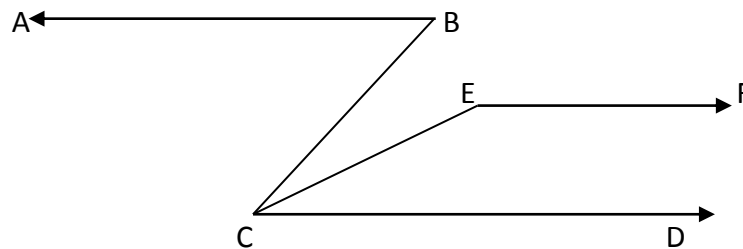
8. Prove that every line segment has one and only one midpoint.
9. Write Euclid's fifth postulate and state its two equivalent versions.
10. From the fig. given below show that the length(AH) > sum of lengths (AB+BC+CD)



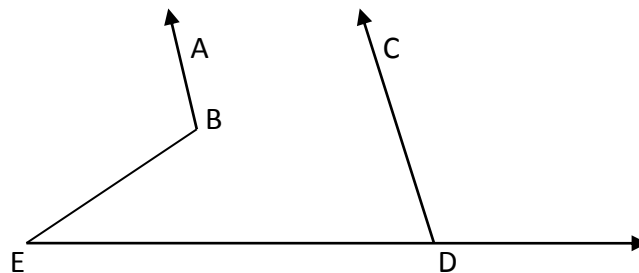
11. Prove that two distinct lines cannot have more than one point in common.
12. 'Lines are parallel if they do not intersect' is stated in the form of a _____
13. In how many points can two distinct lines at the most intersect?
14. The statements that are proved are called _____.
15. Minimum number of points required to fix a line is _____.
16. The lines AOB, COD and EOF are concurrent lines with point of concurrency is _____.
17. If B lies between A and C and $AC = 10$ cm, $BC = 6$ cm, find AB^2 .

Chapter- 6: LINES AND ANGLES

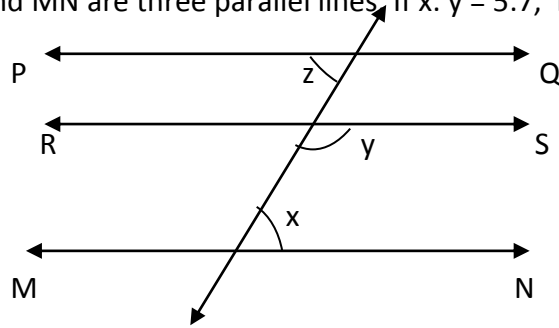
1. The angles $(7x - 12)^\circ$ and $(2x + 30)^\circ$ will be angles of a linear pair if $x =$ _____
2. In the given figure $\angle ABC = 68^\circ$, $\angle BCE = 36^\circ$, $\angle ECD = 32^\circ$, and $\angle CEF = 148^\circ$. Show that AB is parallel to EF.



3. It is given that $\angle PQR = 112^\circ$ and PQ is produced to a point X. Draw a figure from the given equation. If ray QY bisects $\angle RQX$, find $\angle PQY$ and reflex $\angle YQX$.
4. Two complementary angles are such that two times the measure of the first one is three times the measure of the other. Find the measure of the larger angle.
5. In the figure AB is parallel to CD. $\angle CDE = 83^\circ$, $\angle BED = 50^\circ$, find $\angle ABE$.



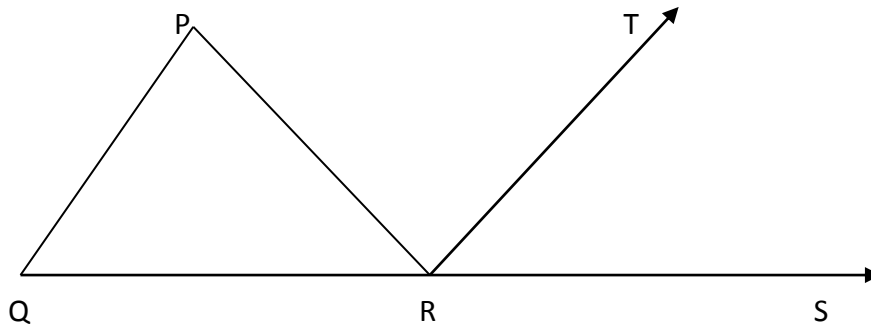
6. In the figure PQ, RS and MN are three parallel lines. If $x : y = 5 : 7$, find $y - z : x + z$



7. Prove that:

- The sum of the angles of a triangle is 180°
- If two lines intersect, then the vertically opposite angles are equal.
- If two parallel lines are intersected by a transversal, the bisectors of the interior angles form a rectangle.

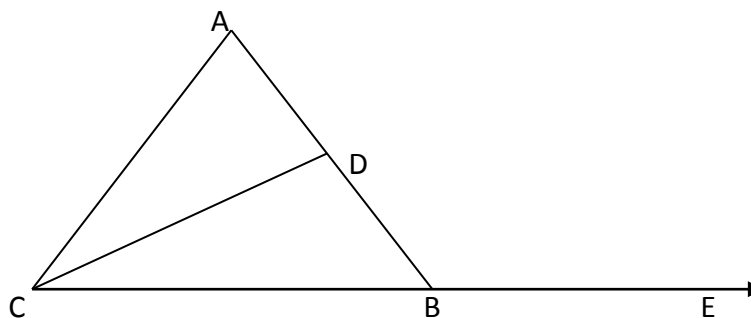
8. In the fig. side QR of $\triangle PQR$ has been produced to S, if $\angle P : \angle Q : \angle R = 3 : 2 : 1$ and RT is perpendicular to PR, find $\angle TRS$



9. In $\triangle ABC$, $\angle A - \angle B = 15^\circ$, $\angle B - \angle C = 30^\circ$, find $\angle A$, $\angle B$ and $\angle C$.

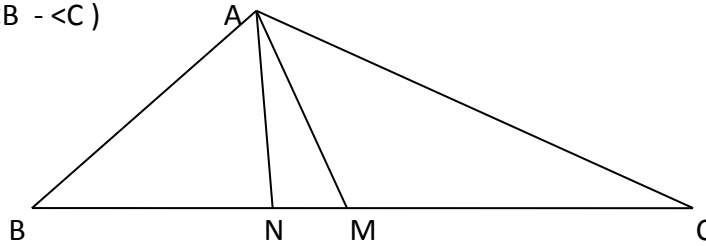
10. In the figure, CD is perpendicular to AB, $\angle ABE = 125^\circ$, $\angle BAC = 67^\circ$, $\angle ACD = x$ and $\angle DCB = y$

Find the value of $y - x$



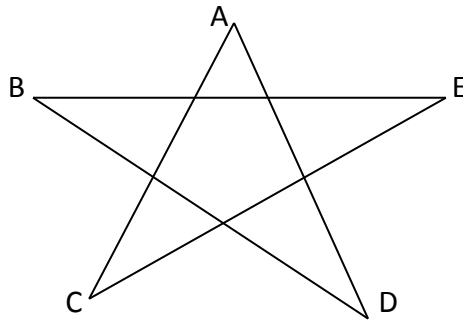
11. In $\triangle ABC$, $\angle B > \angle C$. If AM is the bisector of $\angle BAC$ and AN is perpendicular to BC . Prove that

$$\angle MAN = \frac{1}{2} (\angle B - \angle C)$$



12. Prove that the bisectors of a pair of V.O .A form a straight line.

13. In the fig. find the value of $\angle A + \angle B + \angle C + \angle D + \angle E$



14. Three friends walk away from a point in three different directions such that the path of each is equally inclined of those of the other two. Find the angles their paths make with each other.

15 . In a $\triangle ABC$, $\angle B = 45^\circ$, $\angle C = 81^\circ$, and bisector of $\angle A$ meets BC at a point D . Find $\angle ADB$ and

$\angle ADC$.