CLASS IX
SAMPLE PAPER
MATHS (STANDARD)

Time Allowed: 90 minutes **Maximum Marks: 40**

General Instructions:

1. The question paper contains three parts A, B and C

2. Section A consists of 20 questions of 1 mark each. Any 16 questions are to be attempted

3. Section B consists of 20 questions of 1 mark each. Any 16 questions are to be attempted

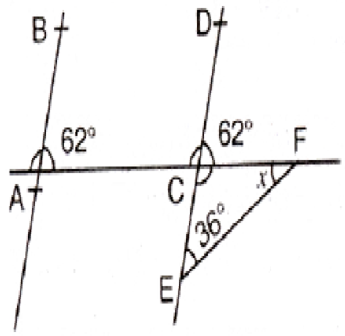
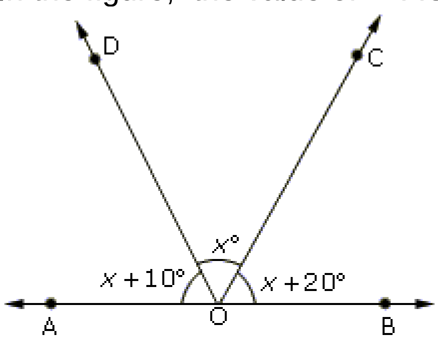
4 Section C consists of 10 questions based on two Case Studies. Attempt any 4 questions from each Case Studies.

5. There is no negative marking.

SECTION A

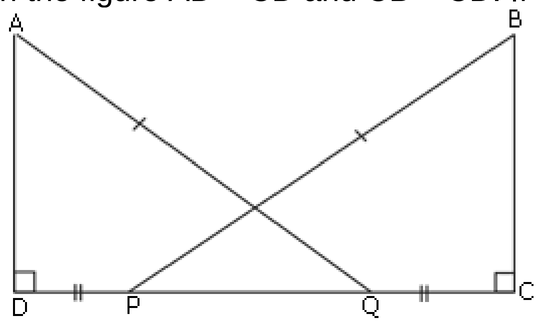
(Section A consists of 20 questions of 1 mark each. Any 16 questions are to be attempted)

1.	The name of the horizontal line in the cartesian plane which determines the position of a point is called: (a) Origin (b) X-axis (c) Y-axis (d) Quadrants	[1]
2.	To locate the position of an object or a point in a plane, we require two lines, they are (a) Parallel to each other (c) Both (a) and (b) (b) perpendicular to each other (d) None of these	[1]
3.	The point which lie on x and Y-axis is (a) (0, 8) (b) (0, 0) (c)(4, 7) (d) (-7, 0)	[1]
4.	Show that 0.2353535... = $0.2\overline{35}$. can be expressed in the form p/q , where p and q are co-prime integers and q ≠ 0, then p is (a) 235 (b) 233 (c) 999 (d) 990	[1]

5.	Which of the following is equal to x^2? (a) $x^{\frac{12}{7}} - x^{\frac{5}{7}}$ (b) $\sqrt[12]{(x^4)^{\frac{1}{3}}}$ (c) $\left(\sqrt{x^{3}}^{\frac{2}{3}}\right)$ (d) $x^{\frac{2}{4}} \times x^{\frac{6}{4}}$	[1]
6.	The rationalizing factor of $\frac{3}{\sqrt[4]{32}}$ is (a) $\sqrt[4]{8}$ (b) $\sqrt[4]{32}$ (c) $\sqrt[4]{16}$ (d) none of these	[1]
7.	In figure, AB || ED, the value of x is:  (a) 62^0 (b) 26^0 (c) 98^0 (d) None of these	[1]
8.	An angle is 18^0 less than its complementary angle. The measure of this angle is (a) 36^0 (b) 48^0 (c) 83^0 (d) 81^0	[1]
9.	In the figure, the value of $\angle$AOD. is  (a) 70^0 (b) 120^0 (c) 50^0 (d) None of these	[1]
10.	On plotting P (–3, 8), Q (7, –5), R (–3, –8) and T (–7, 9) are plotted on the graph paper, then point(s) in the third quadrant are: (a) P and T	[1]

(b) Q and R
(c) Only R
(d) P and R

11. In the figure AD $\perp$ CD and CB $\perp$ CD. If AQ = BP and DP = CQ, then $\angle$DAQ = [1]

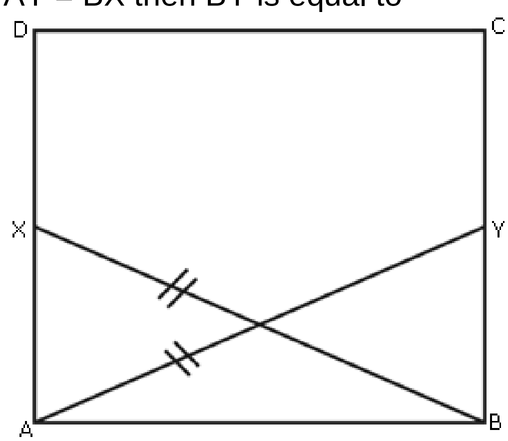


(a) $\angle$BPC (b) $\angle$PCB (c) $\angle$BPD (d) $\angle$CBP

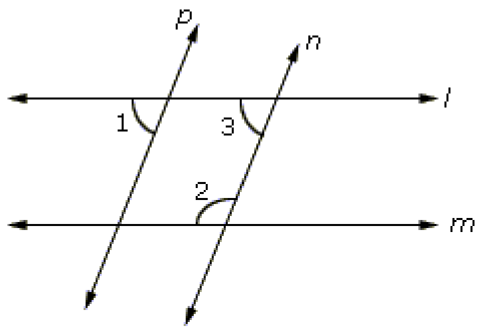
12. The equation y = 5, in two variables, can be written as: [1]

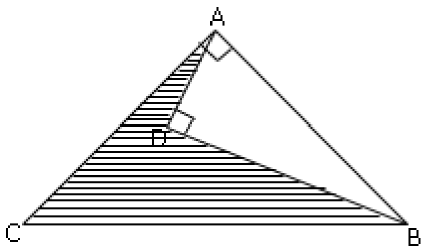
a. 1 .x + 1 .y = 5
b. 0 .x + 0 .y = 5
c. 1 .x + 0 .y = 5
d. 0 .x + 1 .y = 5

13. ABCD is a square X and Y are points on sides AD and BC respectively such that AY = BX then BY is equal to [1]



(a) AX (b) CY (c) DX (d) None of these

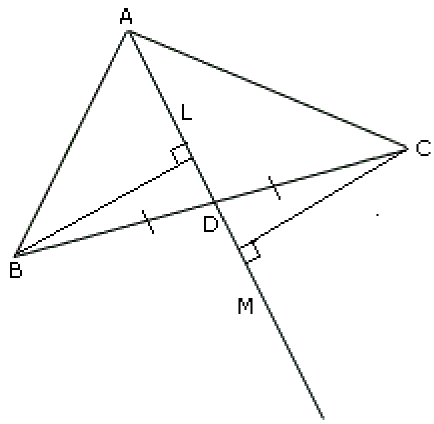
14.	In the figure, $l \parallel m$ and $p \parallel n$. If $\angle 1 = 75^o$, prove that $\angle 2 = \angle 1 + \frac{1}{3}$ (of an angle x) then x must be equal to  (a) 105^0 (b) 150^0 (c) 90^0 (d) None of these	[1]
15.	I am four times as old as my son whose age is x years. The linear equation in two variables to represent this statement is (a) 4x=y (b) 4x>y (c) 4x <y (d) none of these	[1]
16.	Three coins were tossed 30 times simultaneously. Each time the number of heads occurring was noted down as follows: 0 ,1, 2, 2 ,1, 2 ,3, 1, 3, 0, 1, 3, 1, 1, 2, 2, 0, 1, 2, 1, 3, 0, 0,1,1,2, 3, 2, 2, 0 then the frequency of 2 is (a) 10 (b) 9 (c) 6 (d) 5	[1]
17.	To analyze the election results, the data is collected from a newspapers. The data thus collected is known as (a) secondary data (b) raw data (c) grouped data (d) primary data	[1]
18.	A triangular park ABC has sides 120m, 80m and 50m (see Fig. 12.7). A gardener Dhania has to put a fence all around it and also plant grass inside. How much area does she need to plant? Find the cost of fencing it with barbed wire at the rate of Rs.20 per metre leaving a space 3m wide for a gate on one side.	[1]

	(a) Rs. 4490 (b) Rs. 4904 (c) Rs.4940 (d) None of these	
19.	In the given figure $\angle$ADB = $\angle$BAC = 90º, *AD* = 3 cm, BD = 4 cm and BC = 13 cm, the area of the shaded portion is  (a) 30 cm^2 (b) 24 cm^2 (c) 6 cm^2 (d) None of these	[1]
20.	Sides of a triangle are in the ratio of 12 : 17 : 25 and its perimeter is 1080 cm. Find its area. (a) 36000 cm^2 (b) 3600 cm^2 (c) 36000000 cm^2 (d) None of these	[1]

SECTION B

(Section B consists of 20 questions of 1 mark each. Any 16 questions are to be attempted)

21.	**Every rational number is:** a. Whole number b. Natural number c. Integer d. Real number	
22.	Which of the following is an irrational numbers (a) 0.251 (b) $\sqrt{49}$ (c) 4.215215 ... (d) 5.120120012 ...	
23.	In the given figure, AD is a median. Lines BL and CM are drawn perpendicular to AD. Prove that BL.	

	 PRIYAM TAYAL (a) AL (b) LM (c) CM (d) CD	
24.	The side QR of Δ PQR is produced to a point S. If the bisectors of ∠ PQR and ∠ PRS meet at point T, then prove that ∠ QTR =. (a) $\frac{2}{3}$∠ QPR (b) $\frac{3}{4}$∠ QPR (c) $\frac{1}{2}$∠ QPR (d)None of these	
25.	In an examination, ten students scored the following marks: 60, 58, 90, 51, 47, 81, 70, 95, 87, 99. The range of this data is (a) 51 (b) 52 (c) 60 (d) 81	
26.	ΔABC is an isosceles triangle in which AB = AC. Side BA is produced to D such that AD = AB then ∠ BCD is a. (a) acute angle (b) obtuse angle (c) straight angle (d) right angle	
27.	A grouped frequency distribution table with classes of equal sizes using 63-72 (72 included) as one of the class is constructed for the following data: 30, 32, 45, 54, 74, 78, 108, 112, 66, 76, 88, 40, 14, 20, 15, 35, 44, 66, 75, 84, 95, 96, 102, 110, 88, 74, 112, 14, 34, 44. The number of classes in the distribution will be: (a) 9 (b) 10 (c) 11 (d) 12	

28\. In a frequency distribution, 34-38,41-45, ……… and so on. The lower class limit of first class interval when it expressed as a continuous distribution is

(a) 39.5 (b) 40.5 (c) 38.5 (d) none of these

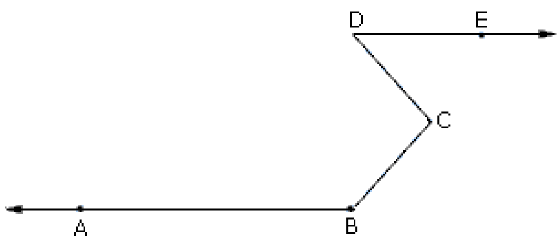
29\. The class size in 5 - 5.02

(a) 5.01 (b) 0.02 (c) 5 (d) None of these

30\. If $x = 3 - 2\sqrt{2}$, find $x^2 + \frac{1}{x^2}$

(a) $6+4\sqrt{2}$ (b) $6 - 4\sqrt{2}$ (c) 6 (d) None of these

31\. In the figure, AB||DE. If ∠ABC + ∠BCD = x + ∠CDE, then the value of x is



(a) 90^0 (b) 180^0 (c) 270^0 (d) None of these

32\. ∠X = 62°, ∠XYZ = 54°. If YO and ZO are the bisectors of ∠XYZ and ∠XZY respectively of Δ XYZ, find ∠YOZ.

(a) 116^0 (b) 121^0 (c) 59^0 (d) None of these

33\. In figure 2, ∠DBE + ∠EQD is

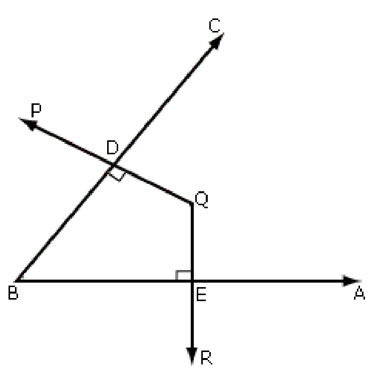
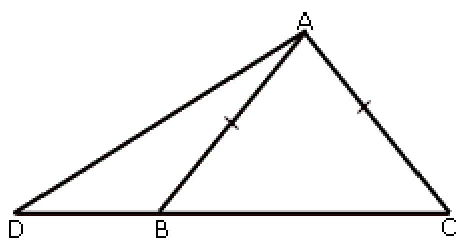
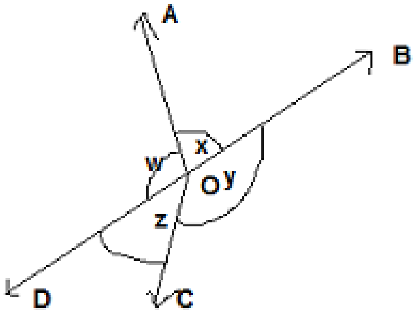


Figure 2

	(a) 190º (b) 200º (c) 160º (d) 180º	
34.	Students of a school staged a rally for cleanliness campaign. They walked through the lanes in two groups. One group walked through the lanes AB, BC and CA; while the other through AC, CD and DA (see Fig. 12.12). Then they cleaned the area enclosed within their lanes. If AB = 9 m, BC = 40 m, CD = 15 m, DA = 28 m and ∠ B = 90º, which group cleaned more area and by how much? Find the total area cleaned by the students (neglecting the width of the lanes). (a) 603 m^2 (b) 306 m^2 (c) 630 m^2 (d) None of these	
35.	The area of a regular hexagon is 600 $\sqrt{3}$ cm^2. Determine its perimeter. (a) 80 cm (b) 90 cm (c) 60 cm (d) None of these	
36.	In an isosceles triangle ABC with AB = AC, D and E are points on BC such that BE = CD, then BD equals to (a) EC (b) ED (c) AD (d) None of these	
37.	In an isosceles triangle ABC, AB = AC and CB is produced to D. then AD is greater than .  (a) BD (b) CD (c) AC (d) None of these	
38.	The graph of the line x - 2y = 3., find the coordinates of the points when x = - 5 (a) 4 (b) 1 (c) – 4 (d) None of these	
39.	The sum of a two digit number and the number obtained by reversing the order of its digits is 121. The linear equation of two variables to represent this statement is (a) x=11-y (b) 10x +y=121 (c) 121-10x= -y (d) None of these	
40.	In Fig. 6.16, if x + w = y+ z, then OB and OD are.	

	 (a) Parallel (b) intersecting (c) can't say (d) None of these	

SECTION C

Case study based questions: Section C consists of 10 questions of 1 mark each. Any 8 questions are to be attempted. Q41-Q45 are based on Case Study -1.

Case Study -1

Read the following passage and answer any four out of five.

The below pictures are few artificial examples of tringular shaped market building for better distribution.

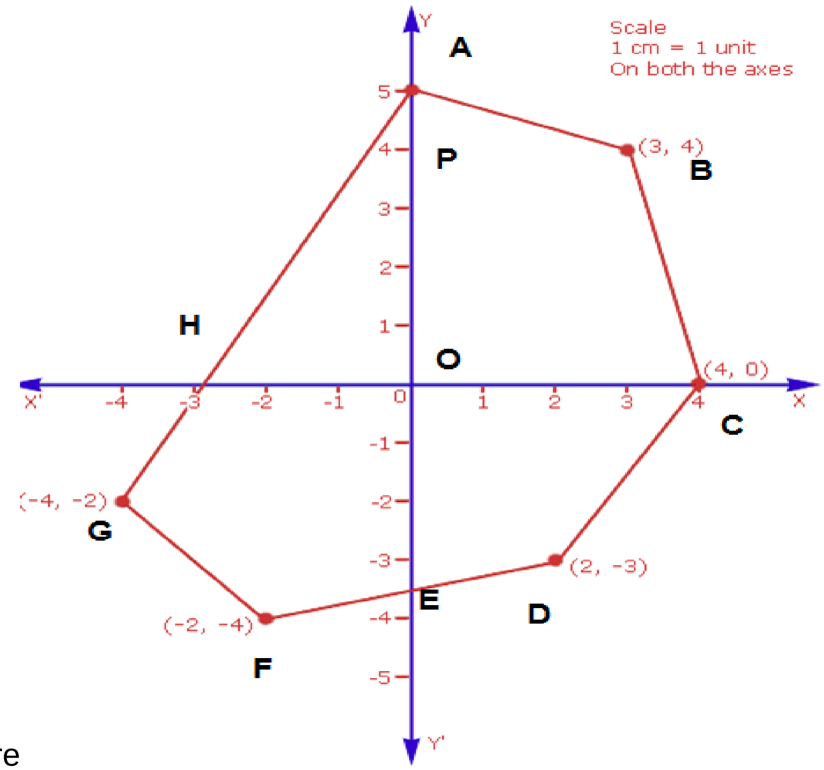
Answer the following questions as per the direction.

41.	In the given figure, name the two triangles which are congruent to each other. (a) ΔHIG ≅ ΔDEF (b) ΔHIG ≅ ΔABC (c) ΔHIG ≅ ΔCBA (d) None of these	[1]
42.	The side AB of ΔABC equal to (a) GI (b) DE (c) HG (d) HI	[1]
43.	$\angle G$ is equal to the angle (a) $\angle C$ (b) $\angle E$ (c) $\angle A$ (d) $\angle D$	[1]
44.	If the area of Δ ABC is 120 m^2 then, it is equals to (a) area of ΔDEF (b) area of GCAH (c) area of ΔHIG (d) None of these	[1]
45.	If sides of triangle HIG are in the ratio of HI:GI:GH = 3:4:2,then the length of BC, if the perimeter of ΔDEF 540 m triangle is (a) 120m (b) 240m (c) 180m (d) None of these	[1]

Case Study -2

Q46-Q50 are based on Case Study -2

In the following figure, points are plotted on a graph paper in successive order (-4, -2), (-2, -4), (2, -3), (4, 0), (3, 4) and (0, 5) to obtain a polygon. Answer the following questions as per the figure



46.	Name the figure formed by joining the points in an order is (a) hexagon (b) Heptagon (c) Octagon (d) None of these	[1]
47.	The co-ordinate of point P is (a) (0,4) (b) (4,0) (c) (4,4) (d) None of these	[1]
48.	The special name of the figure formed by joining B,P,O and C is (a) quadrilateral (b) trapezium (c) parallelogram (d) None of these	[1]
49.	Area of the triangle formed by OAH is (a) -7.5 cm^2 (b) 15 cm^2 (c) 7.5 cm^2 (d) None of these	[1]
50.	If a mirror is placed along the Y axis, then the co-ordinate of the reflection of the point D is (a) (-2,-3) (b) (-2,3) (c) (2,3) (d) None of these	[1]