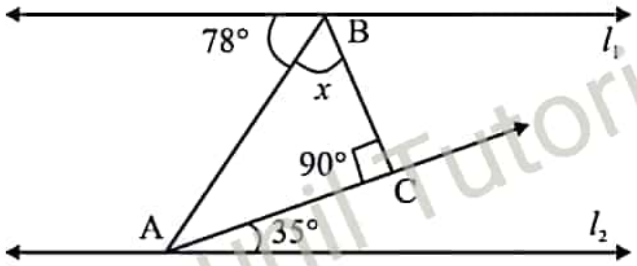
Sample Paper (Session 2017-18) - 2

Time: 3 Hr **Class: IX Subject: Mathematics** **M.M:80**

Instruction: The question paper consists of 30 questions divided into four section A, B, C, and D.
Section-A comprises of 6 questions of 1 mark each;
Section-B comprises of 6 questions of 2 marks each;
Section-C comprises of 10 questions of 3 marks each and
section-D comprises of 8 questions of 4 marks each.

SECTION-A

1. Find Two irrational numbers between 2017 and 2018.
2. Find the co-efficient of a^2 in $(a-1)(a^2+1)$.
3. If abscissa of a point is zero, on which axis do the point lies.
4. In the figure, for what value of x is $l_1 \| l_2$?

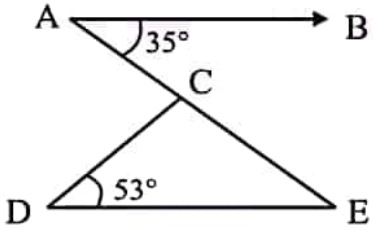


5. The diagonal of cube is $\sqrt{12}$ cm. What is length of its edge.
6. A & B are the only two outcomes of an event. Probability of P(A)= 0.72, then what will be the probability P(B).

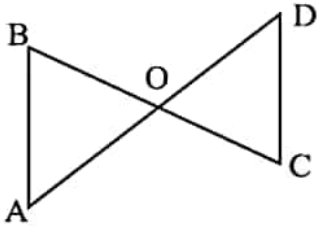
SECTION-B

7. Give possible expression for the length and the breadth of the rectangle, whose area is $6x^2+x-12$.

8. If AB||DE, $\angle BAC = 35°$ & $\angle CDE = 53°$, find $\angle DCE$ & $\angle DEC$.



9. In the given figure, $\angle B < \angle A$ and $\angle C < \angle D$. Show that $AD < BC$.



10. If two adjacent angles of a parallelogram PQRS are $(10y-9)°$ & $(8y+45°)$, Find all the four angles of parallelogram.

11. The longest side of a right angled triangle is $125m$ and one of the remaining two sided is 100m. Find its area using Heron's formula.

12. The numbers 2, 3, 4, 4, $3x-1$, $3x+1$, 7, 7, 8 are written in ascending order. If the median is 5, find x.

SECTION-C

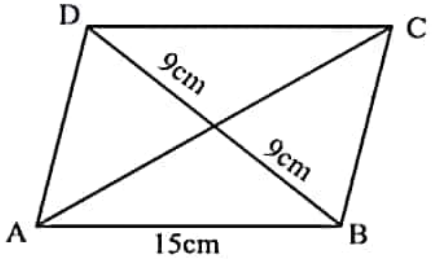
13. Find the values of a and b, if $\frac{3+\sqrt{2}}{3-\sqrt{2}} = a + b\sqrt{2}$

14. Factorise : $(2x-y-z)^3 + (2y-z-x)^3 + (2z-x-y)^3$

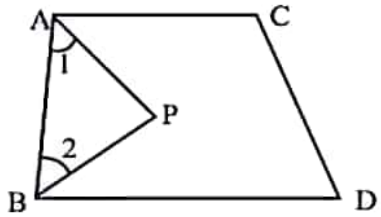
15. Find three different solutions of $3m-8n=27$.

16. Plot two points P(0,–4) & Q (0,4) on the graph paper. Now plot R & S such that ΔPQR & ΔPQS are isosceles triangles.

17. ABCD is a rhombus with one diagonal equal to 18cm. & length of each side equal to 15 cm. Find the length of the other diagonal and area of rhombus.



18. In the figure, AP and BP are the bisectors of two adjacent angles A and B of quadrilateral ABCD. Prove that $2\angle APB = \angle C + \angle D$.



19. Construct a triangle whose perimeter is 15cm and its two base angles are 90° and 30°.

20. A Conical tent is $16m$ high and the diameter of its base is $24m$. Find the cost of Canvas required to make the tent, if cost of $1m^2$ Canvas is ₹ 210.

21. A Hemispherical tank full of water is to be emptied by a pipe at the rate of 3 liters per minutes. How long will its take to empty the tank, if the diameter of the tank is $1\frac{3}{4}$ m?

22. The marks of 80 students (out of 80) in English speaking skills was recorded as follows:

Marks	0-20	21-39	40-60	61-80
No. of students	18	19	23	20

If the passing marks are 50% then find the probability that the student chosen at random:

i) Got the passing mark.

ii) Failed to get the passing marks.

iii) Got below 21 marks.

SECTION-D

23. Represent $(1+\sqrt{9.5})$ on the number line.

24. $x + 2$ is a factor of polynomial $ax^3 + bx^2 + x - 2$ and the remainder 4 is obtained by dividing this polynomial by x-2. Find the value of a and b.

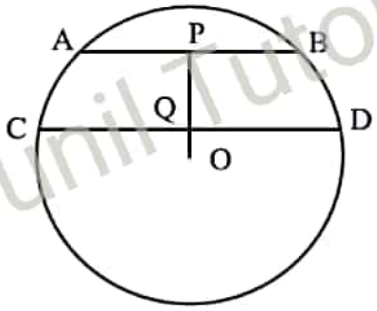
25. Solve for x:

$$\frac{3x+2}{7} + \frac{4(x+1)}{5} = \frac{2}{3}(2x+1)$$

26. If two paralled lines are intersected by a transversal prove that the bisectors of the interior angles on the same side of transversal intersect each other at right angles.

27. In a square PQRS, diagonals PR and QS intersect at O. Show that $\Delta POQ \cong \Delta QOR \cong \Delta ROS \cong \Delta SOP$.

28. In the given figure O is the centre of the circle of radius 5cm, $OP \perp CD$, $AB \parallel CD$, AB=6cm and CD=8cm, Determine PQ.



29. A right triangle having sides 6cm, 8cm and 10m is revolved about the side of length 6cm. Find the volume of solid so formed.

30. If the 26 English alphabets are taken such that A=1, B=2, C=3, ...Z=26 then find

    i) The mean & median of the numbers corresponding to the vowels.

    ii) Which alphabet corresponds to the median.

PRACTICE QUESTION PAPER-2

ANSWERS

1. 2017.01010001....., 2017.020020002.....(other answers are also possible)

2. -1

3. y-axis

4. 47

5. 2cm

6. 0.28

7. $(2x+3, (3x-4)$

8. $\angle DCE = 92°, \angle DEC = 35°$

10. $71°, 119°, 71°, 119°$

11. $3750m^2$

12. 2

13. $a = \frac{11}{7}$, $b = \frac{6}{7}$

14. $3(2x-y-z)(2y-z-x)(2z-x-y)$

15. Any 3 correct solutions

17. $AC = 24cm$, Area $= 216cm^2$

20. 158400

21. 7.8 hours (approx)

22. (i) $\frac{43}{80}$ (ii) $\frac{37}{80}$ (iii) $\frac{18}{80}$

24. $a = 0, b = 2$

25. $x = 4$

28. $1cm$

29. $128\pi\, cm^3$

30. i) Mean = 9.8

Median = 9

ii) I