Class IX
Summative Assessment II
Mathematics
Time : 3 Hrs M.Marks : 80
General Instructions :

1) All questions are compulsory.
2) The question paper consist of 34 question divided into four sections A, B, C, D
3) Section A contains 12 multiple choice type question, first 8 (1-8) of which carries mark each, next 4 (9-12) carries 2 marks each Section B contains 7 questions 2 marks each, Section C contains 10 questions of 3 marks each and Section D contains 5 questions of 4 marks each.

SECTION A

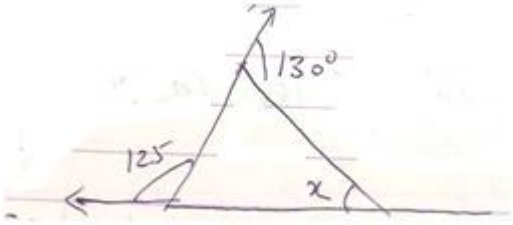
Q1. Between two Rational numbers

a) There is exactly one rational number.
b) There are exactly 2 rational number
c) There are infinitely many rational number
d) There are only rational number and no irrational number

Q2. The value of 0.9999……in the form of p/q where p, q are integers and q≠ 0 is

a) 1/9 b) 2/9 c)9/10 d)None of these

Q3. Find x



a) 75^0 b) 70^0 c) 80^0 d)None of these

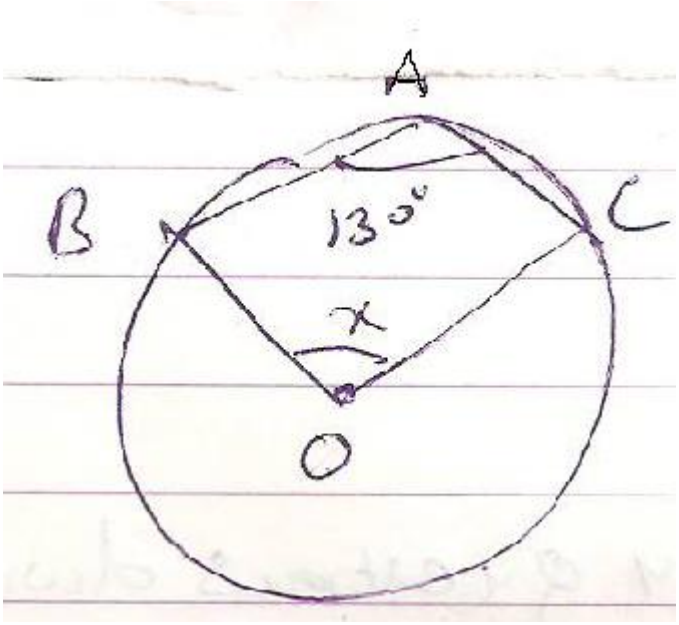
Q4. In a right angled ΔABC, <a=90^0 then

a) BC is longest side
b) BC is Shortest Side
c) AB is longest side
d) d) AC is longest side

Q5. If in quadrilateral ABCD, AB || CD then ABCD is a

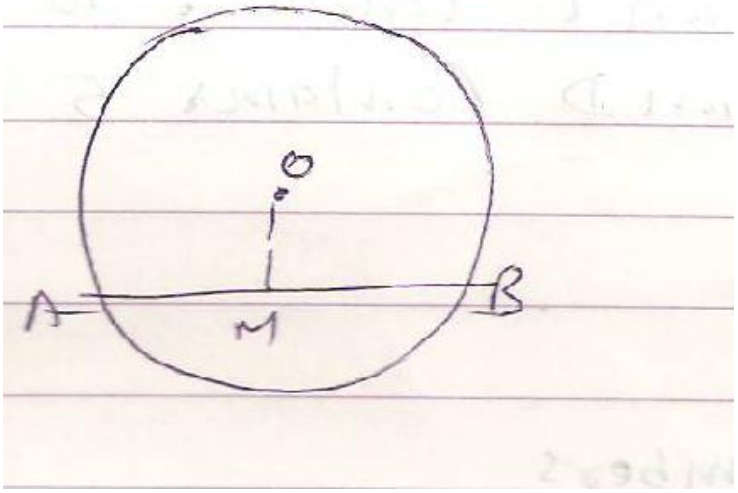
a) parallelogram b)Rectangle c)Rhombus d)None of these

Q6. In the given figure, O is the centre of the circle if <BAC=130^0 then x is-



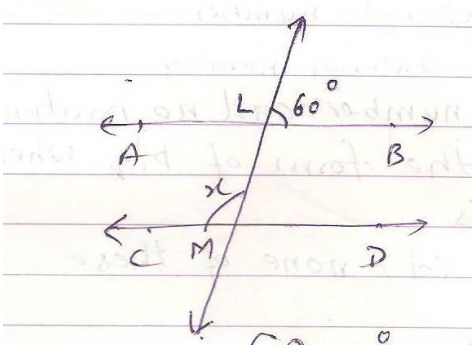
a) 130^0 b) 100^0 c) 120^0 d)None of these

Q7 O is the centre of the circle AB is a chord of a circle OM⊥AB if AB=20 cm. OM=$2\sqrt{11}$cm then radius of the circle is



a) 15 cm. b) 12 cm. c) 10 cm. d) 11 cm.

Q8 If AB || CD, then value of x is-



a) 60^0 b) 120^0 c) 100^0 d)None of these

Q9 After rationalizing the denominator of $\frac{1}{2+\sqrt{3}}$ its value is

a) $\sqrt{2}$ b) $-2+\sqrt{3}$ c) $2+\sqrt{3}$ d) $2-\sqrt{3}$

Q10. The remainder obtained by dividing $p(x)=x^3+1$ by $x+1$ is

a) 0 b) 1 c) 2 d)-1

Q11. Which of the following is not a congruency rule of triangle?

a) AAA b) ASA c) RHS d)SSS

Q12. The following observations have been arranged in ascending order.

11,12,14,16,18,x+2, x+4,30,32,35,41,45

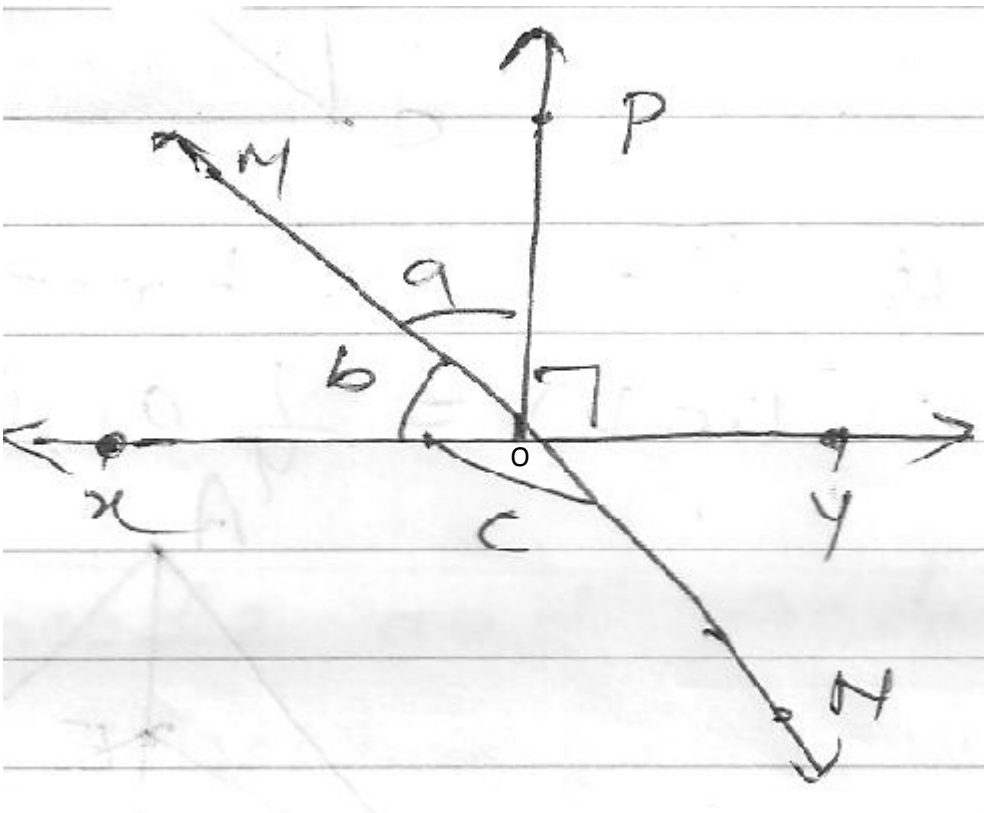
If the median of the data is 22 then the value of x is

a) 17 b) 18 c) 19 d)20

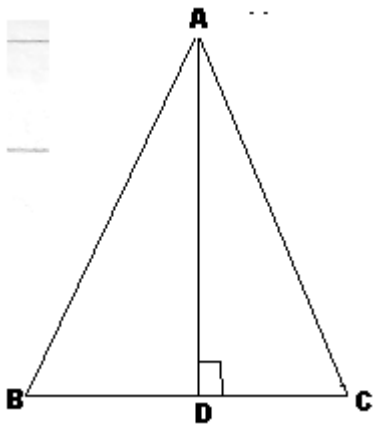
SECTION B

Q13. Locate $\sqrt{3}$ on a number line.

Q14. In the given figure XY and MN intersect at U If <POY = 900 and b:c =2:3 find the value of a



Q15 In ΔABC, the bisector of <A is perpendicular to side BC. Show that AB=AC.



Q16 If one angle of a parallelogram is a right angle prove that it is a rectangle.

Q17. The angles of a quadrilateral are in the ratio 3:5=9:14 find all the angles.

Q18. Find the curved surface area of a right circular cone whose slant height is 10 cm and base radius is 7 cm.

Q19. Find the mean of odd natural number less than 11.

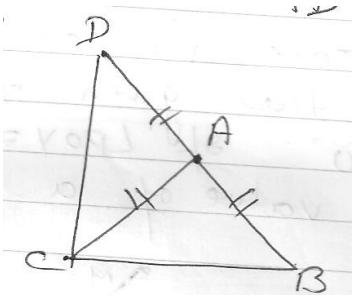
SECTION C

Q20. Using suitable identity evaluate $(102)^3$

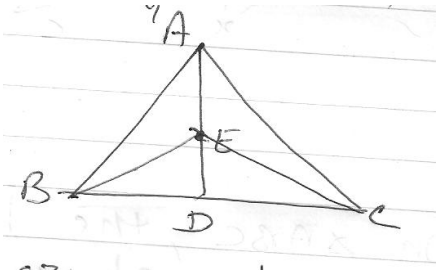
Q21 Factorize:

$3 - 81x^3$

Q22. In the given figure AB=AC=AD prove that <BCD=90^0



Q23. In ΔABC, E is the mid point of AD. Show that ar(BED)= $\frac{1}{4}ar(ABC)$

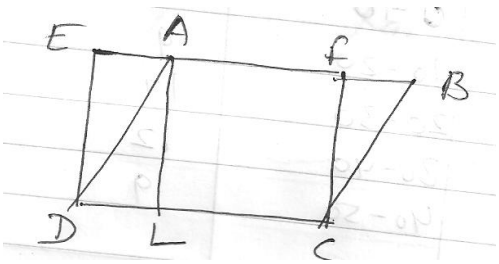


Q24. ABCD is a trapezium with AB||CD A line parallel to AC intersects AB at X and BC at Y prove that, ar(ADX) = ar(ACY)

Q25. ABCD is a parallelogram and EFCD is a rectangle AL ⊥ DC prove that

(i) ar(ABCD)=ar(EFCD)

(ii) ar (ABCD)=DC x AL



Q26. If the non parallel sides of a trapezium are equal prove that it is cyclic

Q27. The curved surface area of a right circular cylinder of height 14cm is 88 cm^2. Find the diameter of the base of the cylinder.

Q28. A hemispherical bowl made of brass has inner diameter 10-5 cm. Find the cost of tinplating it on the inside at the rate of Rs. 16 per 100 cm^2

Q29. In a mathematics test given to 15 students the following marks are recorded.

41, 39, 48, 52, 46, 62, 54, 40, 96, 52, 98, 40, 42, 52, 60

Find mode and mean of this data.

Section D

Q30 The following table gives the distribution of students of two sections according to the marks obtained by them.

Section A		Section B	
Marks	Frequency	Marks	Frequency
0-10	3	0-10	5
10-20	9	10-20	19
20-30	17	20-30	15
30-40	12	30-40	10

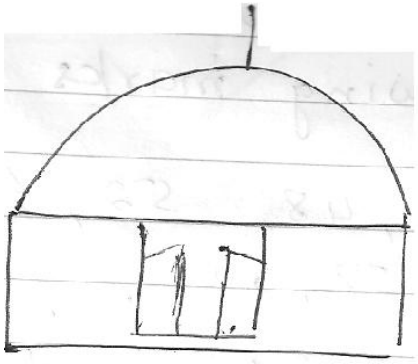
40-50	9	40-50	1

Represent the marks of the students of both sections on the same graph by two frequency polygon and compare the performance.

Q31. Using factor theorem factories:

$$x^3-23x^2 + 142x – 120$$

Q32 A hemispherical dome of a building needs to be painted (figure given below). If the circumference of the base of the dome is 17.6m find the cost of painting it, given the cost of painting is Rs. 5 per $100cm^2$



Q33 (a) Prove that the angle subtended by an arc at the centre is double the angle subtended by it at any point on the remaining part of the circle.

b) Show that angles in a semicircle are of 90^0.

Q34. If a triangle and a parallelogram are on the same base and between the same parallels, then prove that the area of a triangle is equal to half the area of the parallelogram.