PANCHSHEEL PUBLIC SCHOOL

10+2 Senior Secondary School (Affiliated & Recognized by CBSE)
Jaitpur, Badarpur, New Delhi-44

Mid-term Revision-2023-24

Time: 3 hours	**Subject: Maths**	**Class: IX**	**M. Marks: 60**
Name……	**Roll No……**	**Section …….**	**Date:**

Question 1 to 20 each carry 1 mark.

Q.1 If ΔABC≅ ΔLKM, then side of ΔLKM equal to side AC of ΔABC is

(a) LK (b) KM (c) LM (d) None of these

Q.2 Points (-4, 0) and (7, 0) lie

(a) on *x-axis* (b) on y-*axis* (c) in first quadrant (d) in second quadrant

Q.3 The sides of a triangle are 7cm, 9 cm and 14 cm. Its area is

(a) $12\sqrt{5}$cm^2 (b) $12\sqrt{3}$ cm^2 (c) $24\sqrt{5}$ cm^2 (d) 63 cm^2

Q.4If *f(x)* be a polynomial such that $f(-\frac{1}{2}) = 0$ then a factor of *f(x)* is

(a) 2x-1 (b) 2x+1 (c)x-1 (d) x+1

Q.5 In triangle ABC and PQR,if ∠A= ∠R, ∠B = ∠P and AB = RP, then which one of the following congruence conditions applies;

(a) SAS (b) ASA (c) SSS (d) RHS

Q.6 $0.3\overline{2}$ when expressed in the form $\frac{p}{q}$(p, q are integers, q ≠0) is

(a) $\frac{8}{25}$ (b) $\frac{29}{90}$ (c)$\frac{32}{99}$ (d) $\frac{32}{199}$

Q.7 If the surface area of a sphere is 144πm^2, then its volume is

(a) 288 π (b) 316 π (c) 300 π (d) 188 π

Q.8 The total surface area of a cone of radius $\frac{r}{2}$ and slant height 2ι, is

(a) 2πr (ι+r) (b) πr $(\iota + \frac{r}{4})$ (c) πr (ι +r) (d) 2πrι

Q.9 Every rational number is

(a) a natural number (b) an integer (c) a real number (d) a whole number

Q.10 Which of the following is equal to $(-\frac{3}{4})^{-3}$?

(a) $(\frac{3}{4})^{-3}$ (b) - $(\frac{3}{4})^{-3}$ (c) $(\frac{4}{3})^{3}$ (d) $(-\frac{4}{3})^{3}$

Q.11Which of the following is rational?

(a) $\frac{0}{4}$ (b) $\frac{4}{0}$ (c)$\sqrt{3}$ (d) π

Q.12 **If one of the angles of a triangle is 130°, then the angle between the bisectors of the other two angles can be**

(a) 50° (b) 65° (c) 145° (d) 155°

Q.13 **If one angle of a triangle is equal to the sum of the other two angles, then the triangle is**

(a) a right triangle (b) an isosceles triangle (c) an equilateral triangle (d) an obtuse triangle

Q.14 The perpendicular distance of the point P(4,3) from *x-axis* is

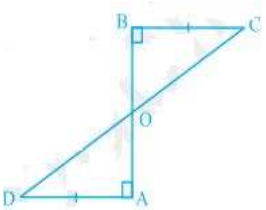
(a) 4 (b) 0 (c) 3 (d) none of these

Each question carries 2mark.

Q.15 Write two numbers whose decimal expansions are non-terminating & non-recurring.

Q.16 Verify whether p(x) = 5x–π, x = 4/5 are zeroes of the polynomial.

Q.17 In which quadrant or on which axis do each of the points (– 2, 4), (3, – 1), (– 1, 0) and (– 3, – 5) lie?

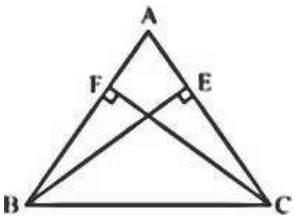


Each question carries 3 marks:

Q.18 Show how √2 can be represented on the number line.

Q.19 AD and BC are equal perpendiculars to a line segment AB. Show that CD bisects AB.

Q.20 BE and CF are two equal altitudes of a triangle ABC. Using RHS congruence rule, prove that the triangle ABC is isosceles.



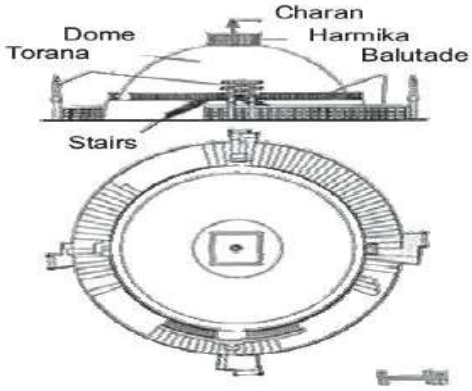
Q.21If the volume of a right circular cone of height 9cm is $48\pi cm^3$, find the diameter of its base.

Each question carries 4 marks:

Case based question -I

Q.22 The Great Stupa at Sanchi is one of the oldest stone structures in India, and an important monument of Indian Architecture. It was originally commissioned by the emperor Ashoka in the 3rd century BCE. Its nucleus was a simple hemispherical brick structure built over the relics of the Buddha. .It is a perfect example of combination of solid figures. A big hemispherical dome with a cuboidal structure mounted on it.

Based on the above paragraph please answer these questions



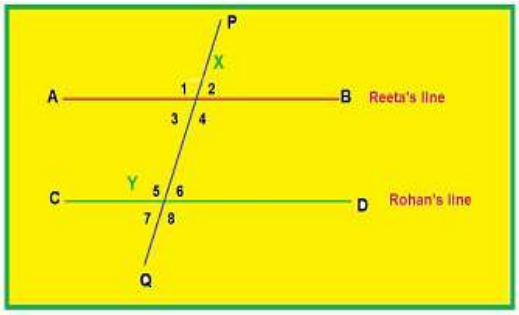
1. Calculate the volume of the hemispherical dome if the height of the dome is 21 m
2. Find the cloth require to cover the hemispherical dome if the radius of its base is 14m is

Case based question -II

Q.23Reeta and Rohan were playing a game on parallel lines and the angles formed with the transverse line (i.e. alternate angles corresponding angle and interior angles). First Reeta drew a straight line AB then Rohan drew another straight line CD||AB. Further a transverse line PQ was drawn which intersects lines AB and CD at points X and Y respectively.

Now they did toss with a coin and Rohan won the toss. Following were the rules of the game:

1. Toss winner will ask a question and others will answer.
2. If the answer is correct then person answering will ask question else questioner will ask next question
3. Who wins the last question he she will be the winner.
4. Total of 4 questions will be asked.



Based on the above paragraph please answer these questions

1. If $\angle 4 = 120°$ then what is the measure of $\angle 6$?
2. What is the sum of $\angle 3$ &$\angle 4$?

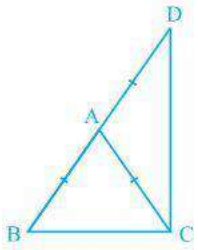
Each question carries 5 marks:

Q.24 Show that: $\left(\frac{1}{4}\right)^{-2} - 3 \times 8^{\frac{2}{3}} \times 4^0 + \left(\frac{9}{16}\right)^{\frac{-1}{2}} = \frac{16}{3}$

Q.25 If both a and b are rational numbers, find the value of a and b. $\frac{5+\sqrt{3}}{5-\sqrt{3}}+\frac{5-\sqrt{3}}{5+\sqrt{3}}=a+b\sqrt{3}$

Q.26 ΔABC **is an isosceles triangle in which AB = AC. Side BA is produced to D such that AD = AB.**

Show that ∠BCD is a right angle.



Q.27 A traffic signal board, indicating 'SCHOOL AHEAD', is an equilateral triangle with side 'a'. Find the area of the signal board, using Heron's formula. If its perimeter is 180 cm, what will be the area of the signal board?

Q.28 What length of tarpaulin 3 m wide will be required to make a conical tent of height 8 m and base radius 6m? Assume that the extra length of material that will be required for stitching margins and wastage in cutting is approximately 20 cm. [Use π=3.14]