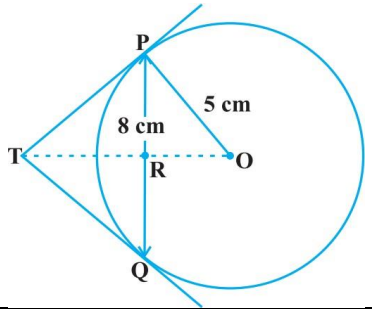
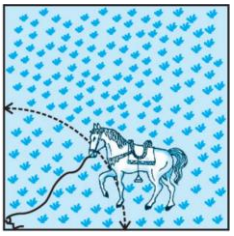
THE VILLAGE
INTERNATIONAL SCHOOL
"We Nurture Dreams"

Date:08/11/2023 Grade: X	Mathematics Monthly Test-2	Max Marks: 20 Time: 50 Minutes

General Instructions:

1. This Question Paper has 3 Sections A, B, and C.
2. Section A has 5 MCQs carrying 1 mark each
3. Section B has 3 questions carrying 2 marks each.
4. Section C has 3 questions carrying 3 marks each.
5. All Questions are compulsory.
6. Draw neat figures wherever required. Take π =22/7 wherever required if not stated

Sl. No.	Questions	Marks
	Section A	
1	From a point Q, the length of the tangent to a circle is 24 cm and the distance of Q from the centre is 25 cm. The radius of the circle is (A) 7 cm (B) 12 cm (C) 15 cm (D) 24.5 cm	1
2	If tangents PA and PB from a point P to a circle with centre O are inclined to each other at an angle of 80°, then ∠POA is equal to (A) 50° (B) 60° (C) 70° (D) 80°	1
3	If TP and TQ are the two tangents to a circle with centre O so that ∠POQ = 110°, then ∠PTQ is equal to (A) 60° (B) 70° (C) 80° (D) 90°	1
4	A medicine capsule is in the shape of a cylinder of diameter 0.5 cm with two hemispheres stuck to each of its ends. The length of the entire capsule is 2 cm. The capacity of the capsule is (A) 0.36 cm^3 (B) 0.35 cm^3 (C) 0.34 cm^3 (D) 0.33 cm^3	1
5	If the circumference of a circle and the perimeter of a square are equal, then (A) Area of the circle = Area of the square (B) Area of the circle > Area of the square (C) Area of the circle < Area of the square (D) Nothing definite can be said about the relation between the areas of the circle and square.	1
	Section B	
6	Prove that: The lengths of tangents drawn from an external point to a circle are equal.	2

7	A cubical block of side 7 cm is surmounted by a hemisphere. What is the greatest diameter the hemisphere can have? Find the surface area of the solid.	2
8	Mayank made a bird bath for his garden in the shape of a cylinder with a hemispherical depression on its top. The height of the cylinder is 1.45 m and its radius is 30 cm. Find the total surface area of the bird-bath. (Take = 22/ 7)	2
	Section C	
9	PQ is a chord of length 8 cm of a circle of radius 5 cm. The tangents at P and Q intersect at a point T (see figure). Find the length TP. 	3
10	A horse is tied to a peg at one corner of a square-shaped grass field of side 15 m by means of a 5 m long rope (see figure). Find (i) the area of that part of the field in which the horse can graze. (ii) the increase in the grazing area if the rope were 10 m long instead of 5 m. (Use = 3.14) 	3
11	Meera and Dheera have 12 and 8 coins respectively each of radius 3.5cm and thickness of 0.5cm. They placed their cylinder one over the other to form solid cylinders. i) Curved surface area of the cylinder formed by Meera is a) $144cm^2$ b) $132cm^2$ c) $154cm^2$ d) $142cm^2$ ii) The ratio of the Curved Surface area of the cylinders made by Meera and Dheera is a) 2:5 b) 3:2 c) 1:2 d) 2:7 iii) The volume of cylinder made by Dheera a) $154cm^2$ b) $144cm^2$ c) $132cm^2$ d) $142cm^2$	3