MAHARASHTRA BOARD CLASS 10
MATHS PART 2 QUESTIONS

School Assessment - School Sample Paper - Standard 10th - Mathematics
Mathematics - Part-2

**Q.1**   **Attempt any FIVE of the following sub-questions:**   **[5]**

(i)   Find the type of the triangle if its three sides are 10, 14 and 20.

(ii)   If the area of the circle is $1296\pi\ cm^2$, then find the length of the longest chord of the circles?

(iii)   The value of $\cos^2 5° - \sin^2 85°$ is equal to

(iv)   Find the required point, if the $y-axis$ is equidistance from the points
         $A(-2, -3)\ and\ B(3, -4)$.

(v)   If the volume of the cube is 1728 cm^3, then find the total surface area of the cube?

(vi)   If the volume of a pyramid is $210\ cm^3$ and height is $15\ cm$, then find the area of the base of the
         pyramid?

Q.2   **Attempt any FOUR of the following sub questions:**   **[8]**

(i)   The areas of two similar triangles are 196 cm^2 and 144 cm^2 respectively. If the median of the
         first triangle is 14.0 $cm,$ find the corresponding median of the other.

(ii)   From a point P, 60 cm away from the centre of a circle, a tangent PT of length 48 cm is drawn.
         Find the radius of the circle.

(iii)   If $21\sec^2\theta - 18\tan^2\theta = 24,$ then, find the value of $\sin\theta$.

(iv)   If $\sin 5A = \cos(A - 30°),$ where $5A$ is an acute angle, then find $\angle A$.

(v)   If the points $A(5,2), B(1,-1)$ and $C(k, 2)$ are collinear, then find the value of k.

(vi)   If the length of the rectangle is increased by 50% and breadth of the rectangle is decreased
         by 30%, then find the % increase in area of rectangle.

Q.3   **Attempt any THREE of the following sub questions:**   **[9]**

(i)   If three circles of radius $6\ cm$ each are bound together by a plastic band as given in
         figure, then find the length of the plastic band $(in\ cm)$ if it is stretched.
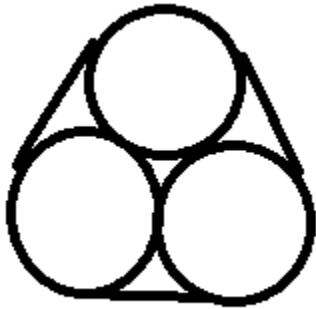
(ii) The value of $\dfrac{\sin^2 46° + \sin^2 44°}{\cos^2 46° + \cos^2 44°} + 5(\cos^2 27° + \cos^2 63°)$ is

(iii) If $11\sin^2\theta + 7\cos^2\theta = 8, (0° \leq \theta \leq 90°)$, then the value of θ is

(iv) If the three vertices of a parallelogram are $(-3,1),(-3,1), and\ (2,4)$, then find the fourth vertex of a parallelogram.

(v) If the sum of the parallel sides of the trapezium is $64\ cm$, area of the trapezium is $320\ cm^2$, then find the height of the trapezium.

Q.4   Attempt any TWO of the following sub questions: **[8]**

(i) If $\tan\theta = \dfrac{15}{25}$, find the value of $\dfrac{25\sin\theta + 5\cos\theta}{25\sin\theta - 5\cos\theta}$

(ii) Draw a circle of radius 5.5 cm. Take a point P on it. Without using the centre of the circle construct a tangent at that point.

(iii) If the measure of an angle is $60°$ and the perimeter of a rhombus is 76 cm, find the area of the rhombus.

Q.5   Attempt any TWO of the following sub questions: **[10]**

(i) The value of $\dfrac{\sin^2 54° + \sin^2 36°}{\cos^2 54° + \cos^2 36°} + 11(\sin^2 37° + \sin^2 53°) - 11(\cos^2 35° + \cos^2 55°)$ is

(ii) If the area of quadrilateral is 6 square units and whose vertices are $A(3,2), B(-3,1), C(2,0)$ and $D(a,-1)$. Find the value of a.

(iii) If the volume of the conical bucket is $48510\ cm^3$, height is $45\ cm$ and the larger radius of the conical bucket is $28\ cm$, then find the smaller radius of the conical bucket.