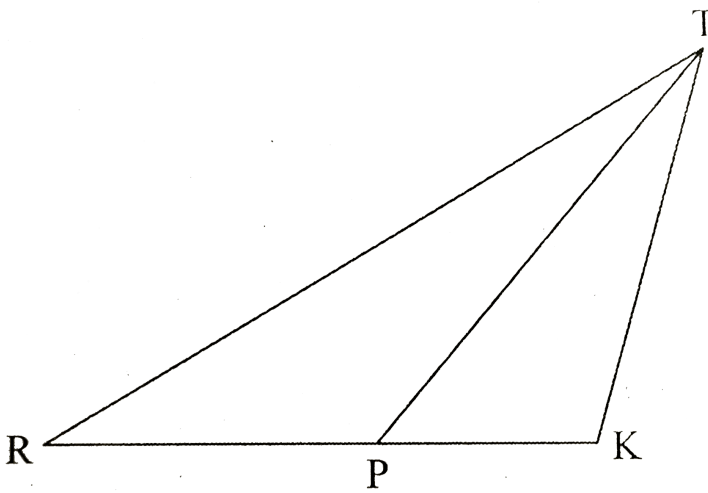# MATHS

BOOKS - GURUKUL BOOKS & PACKAGING MATHS (HINGLISH)

GEOMETRY JULY 2017

Solve Any Five Sub Questions

1. In the following figure $RP:PK = 3:2$, then find the value of $A(\Delta TRP):A(\Delta TPK)$

2. If two circles with radii 8 and 3 respectively touch externally, then find the distance between their centres.

3. If the angle $\theta = -60°$, find the value of $\cos \theta$.

4. Find the slope of the line having inclination $45°$.

5. Find the side of the square whose diagonal is $16\sqrt{2}cm$.

6. Find the volume of a cube with side 6 cm.

1. Sides of a triangle are 7, 24 and 25. Determine whether the triangle is right-angled triangle or not.

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2. The diameter of a sphere is 6 cm. Find the total surface area of the sphere. $(\pi = 3.14)$

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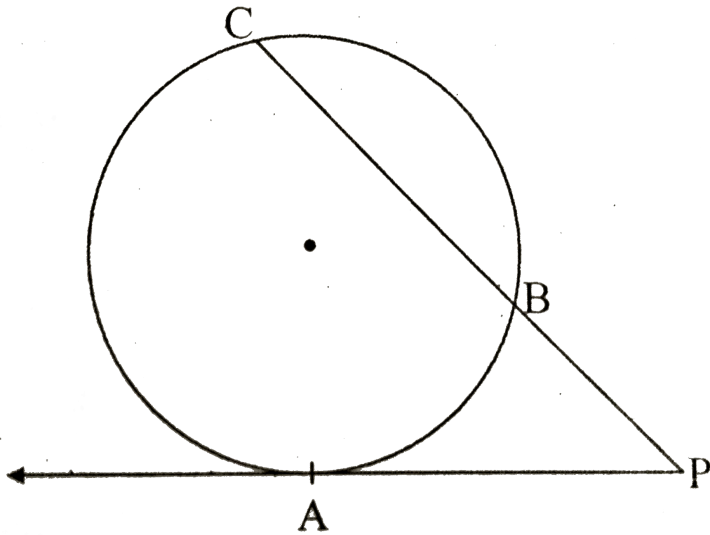**3.** If $\sin\theta = \dfrac{8}{17}$, where θ is an acute angle, find the value of $\cos\theta$ by using identities.

4. Find the area of the sector of a circle of radius 8 cm and arc with length 15 cm.

5. In the given figure, a tangent segment PA touching a circle in A and a secant PBC are shown. If AP = 15 cm and BP

= 10 cm, find the length of PC.

Solve Any Three Sub Questions

1. In $\triangle PQR$, $\angle P = 30°$, $\angle Q = 60°$, $\angle R = 90°$ and $PQ = 12cm$, then find PR and QR.

2. $\square ABCD$ is a cyclic quadrilaterial. M (arc ABC) $= 230°$.

Find $\angle ABC$, $\angle CDA$ and $\angle CBE$.

3. Prove that: $\sec^2 \theta + \mathrm{cosec}^2\theta = \sec^2 \theta \times \mathrm{cosec}^2\theta$.

4. Find the equation of the line passing through the points

$(4, -5)$ and $(-1, -2)$.

1. Theorem 10.2 : The lengths of tangents drawn from an external point to a circle are equal.

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2. A person standing on the bank of a river observes that the angle of elevation of the top of a tree standing on the opposite bank is $60°$. When he moves 40 m away from the bank, he finds the angle of elevation to be $30°$. Find the height of the tree and the width of the river. $\left(\sqrt{3} = 1.73\right)$

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3. If $P(-2, 4), Q(4, 8), R(10, 5)$ and $S(4, 1)$ are the vertices of a quadrilateral, show that it is a parallelogram.

4. सिद्ध कीजिए कि दो समरूप त्रिभुजों के क्षेत्रफलों का अनुपात इनकी संगत माध्यिकाओ के अनुपात का वर्ग होता है

5. A tinmaker converts a cubical metallic box into 10 cylindrical tins. Side of the cube is 50 cm and radius of the

cylinder is 7 cm.Find the height of each cylinder so made if wastage of 12% is incurred in the process. (given $\pi = \dfrac{22}{7}$)