MATHS

BOOKS - GURUKUL BOOKS & PACKAGING MATHS (HINGLISH)

GEOMETRY MARCH 2018

Attempt Any Five Sub Questions From The Following

1. $\Delta DEF \sim \Delta MNK$ है .यदि $DE = 5$ और $MN = 6$ तब $\frac{A(\Delta DEF)}{A(\Delta MNK)}$ का मान होगा -

A. 10:9

B. 5:9

C. 25:36

D. 36:25

Answer: C

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

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3. Find the length of the altitude of an equilateral triangle with side 6 cm.

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4. If $\theta = 45^\circ$, then find tan θ.

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5. Slope of a line is 3 and y intercept is 4.3 Write the equation of a line.

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6. Using Euler's formula, find V, if E = 30, F = 12.

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Attempt Any Four Sub Questions From The Following

1. The ratio of the areas of two triangles with common base is 4:3. Height of the larger triangle is 6 cm, then find the corresponding height of the smaller triangle.

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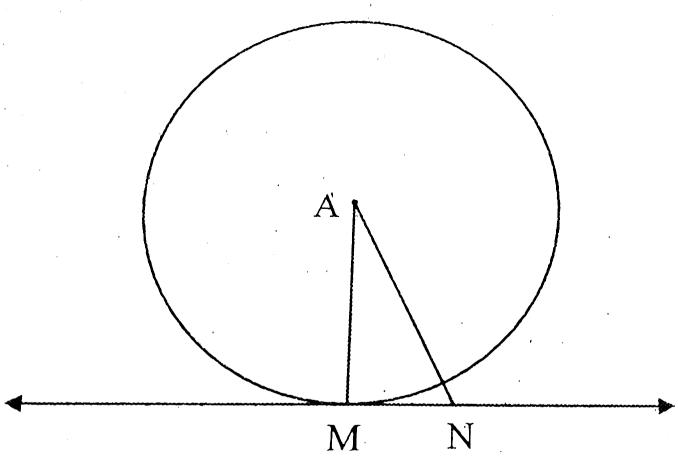
2. In the following figure, point 'A' is the centre of the circle. Line MN is tangent at point M. If AN = 12 cm and MN = 6 cm, determine the radius of the circle.



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3. Draw$\angle PQR$ of measure 70° and bisect it.

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4. If $\cos\theta = \frac{3}{5}$, where $'\theta'$ is an acute angle. Find the value of $\sin\theta$.

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5. The volume of a cube is $1000cm^3$. Find its side.

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6. The radius and slant height of a cone are 4 cm and 25 cm respectively.

Find the curved surface area of that cone.$(\pi = 3.14)$

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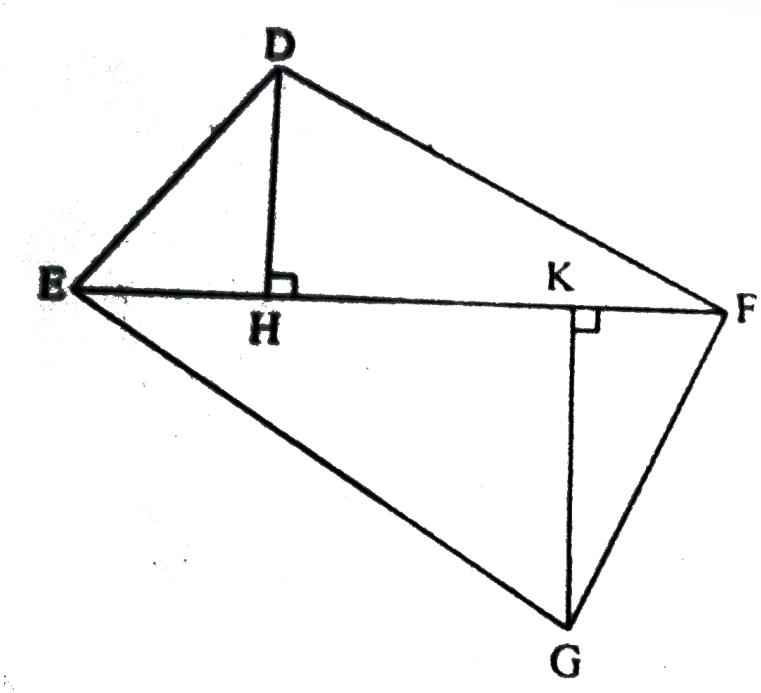
Attempt Any Three Sub Questions From The Following

1. In the following figure, $segDH \perp segEF$ and $segGK \perp segEF$. $If DH = 6cm, GK = 10cm$ and , then find :

$i.\ EF$

$ii.\ A(\Delta GEF)$

iii. $A(\square DFGE)$.



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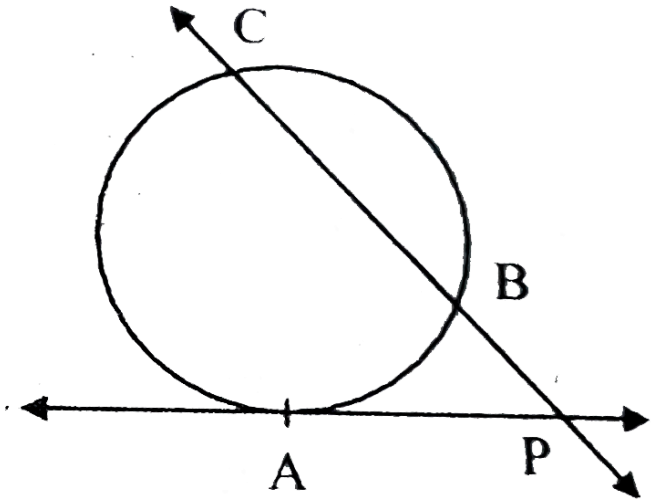
2. In the following figure, ray PA is the tangent to the circle at point A and PBC is a secant. If AP = 14, BP = 10, then find BC.



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3. Prove that $\sec x + \tan x = \sqrt{\frac{1+\sin x}{1-\sin x}}$

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4. Write the equation of the line passing through points C(4, -5) and D(-1, -2) in the form of ax + by + c = 0.

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Attempt Any Two Sub Questions From The Following

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

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2. A tree is broken by the wind. The top of that tree struck the ground at an angle of30° and at a distance of 30 m from the root. Find the height of the whole tree. ($\sqrt{3}$ = 1.73)

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3. A(5, 4), B(-3, -2) and C(1,-8) are the vertices of a triangle ABC. Find the equation of median AD

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4. Prove that, in a right-angled triangle, the square of hypotenuse is equal to the sum of the square of remaining two sides.

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5. In ΔSHR, $SH = 4.5cm$, $HR = 5.2cm$, $SR = 5.8cm$ and $\frac{SH}{SV} = \frac{3}{5}$ construct ΔSVU. $\Delta SHR \sim \Delta SVU.$

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6. If 'V' is the volume of a cuboid of dimensions $a \times b \times c$ and 'S' is its surface area, then prove that $\frac{1}{V} = \frac{2}{5}\left[\frac{1}{a} + \frac{1}{b} + \frac{1}{c}\right].$

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