



MATHS

BOOKS - VK GLOBAL PUBLICATION

MATHS (HINGLISH)

MODEL QUESTION PAPER 8

[UNSOLVED]

Section A

1. Find the HCF of 30,72 and 432.



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2. If α, β are the zeros of the polynomial $4x^2 + 3x + 7$ then find the value of $\frac{1}{\alpha} + \frac{1}{\beta}$.



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3. The coach of a cricket team buys 3 bats and 6 balls for Rs.3900. Later, she buys another bat and 3 more balls of the same kind for Rs.1300.

Represent this situation algebraically and geometrically.



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4. The 4th term from the end of an AP $-11, -8, -5, \dots, 49$ is



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5. Write the number of tangents to a circle which are parallel to a secant.



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6. A die is thrown once. Find the probability of getting an even number less than 5.



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Section B

1. There is a circular path around a sports field. Soma takes 18 minutes to drive one round of

the field, while Ravi takes 12 minutes for the same. Suppose they both start at the same point and at the same time, and go in the same direction. Afte



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2. Find the zeroes of the quadratic polynomial $y^2 + 7x + 10$, and verify the relationship between the zeroes and the coefficients.



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3. Value(s) of k for which the quadratic equation $2x^2 - kx + k = 0$ has equal roots is/are



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4. In a triangle ABC, right angled at B, if $\tan A = \frac{1}{\sqrt{3}}$. Find the value of $\cos A \cos C - \sin A \sin C$.



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5. In $\triangle ABC$, right angled at B, $AB = 5$ cm and $\angle ACB = 30^\circ$. Find BC and AC.



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6. Find the area of a quadrant of a circle whose circumference is 22cm.



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Section C

1. Prove that $5 - \sqrt{3}$ is an irrational number.



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2. Divide the polynomial

$p(x) = x^4 - 3x^2 + 4x + 5$ by the polynomial

$g(x) = x^2 - x + 1$ and find quotient and

remainder.



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3. A boat goes 30 km upstream and 44 km downstream in 10 hours. In 13 hours, it can go 40 km upstream and 55 km downstream. Determine the speed of the stream and that of the boat in still water.



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4. A sum of Rs 700 is to be used to give seven cash prizes to students of a school for their overall academic performance. If each prize is

Rs 20 less than its preceding prize, find the value of each of the prizes.



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5. Find the point on the x -axis which is equidistant from $(2, -5)$ and $(-2, 9)$.



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6. Find the value of k if the point $(2, 3)$, $B(4, k)$ and $C(6, -3)$ are collinear.



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7. In an equilateral triangle ABC , D is a point on side BC such that $BD = \frac{1}{3}BC$. Prove that $9AD^2 = 7AB^2$.



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8. Two tangents TP and TQ are drawn to a circle with centre O from an external point T . Prove that $\angle PTQ = 2\angle OPQ$.



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9. The arithmetic mean of the following frequency distribution is 25. Determine the value of p .

Class interval	0-10	10-20	20-30	30-40	40-50
Frequency	5	18	15	p	6



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10. A child has die whose six faces show the letters as given below:



The die is thrown once. What is the probability of getting (i) A, (ii) D?



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Section D

1. The following table shows the data of the amount donated by 100 people in a blind school.

Amount donated (in ₹)	Number of persons
0–100	2
100–200	5
200–300	x
300–400	12
400–500	17
500–600	20
600–700	y
700–800	9
800–900	7
900–1000	4

If the median of the above data is 525, find the value of x and y .

What values are depicted here ?



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2. If roots of equation

$a - b)x^2 + (b - c)x + (c - a) = 0$ are equal

then prove that $b + c = 2a$



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3. In Figure the line segment XY is parallel to side AC of $\triangle ABC$ and it divides the triangle into two parts of equal areas. Find the ratio

$$\frac{AX}{AB}.$$



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4. Draw a line segment AB of length 8 cm. Taking A as centre, draw a circle of radius 4 cm and taking B as centre, draw another circle of radius 3 cm. Construct tangents to each circle from the centre of the other circle.



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5. Trigonometric ratios for 30° and 60°



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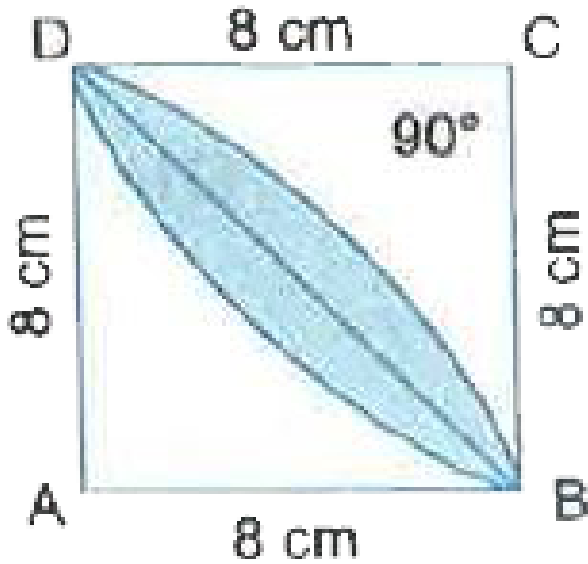
6. From a point on a bridge across river, the angles of depression of the banks on opposite sides of the river are 30° and 45° respectively. If the bridge is at a height of 3 m from the banks, find the width of the river.



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7. Calculate the area of the designed region in common between the two quadrants of circles

of radius 8 cm each.



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