



MATHS

BOOKS - VK GLOBAL PUBLICATION MATHS (HINGLISH)

MODEL QUESTION PAPER - 9 [UNSOLVED]

Section A

1. Without actually performing the long division. State whether the rational number $\frac{84}{455}$ will have terminating decimal expansion or a non-terminating repeating decimal expansion .



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2. Find a quadratic polynomial with 0 , $\sqrt{5}$ as the sum and product of its zeros respectively.



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3. Romila went to a stationery shop and purchased 2 pencils and 3 erasers for Rs 9. Her friend Sonali saw the new variety of pencils and erasers with Romila, and she also bought 4 pencils and 6 erasers of the same kind for Rs 18. Represent this situation



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4. Write the common difference of the AP, 0.6 , 1.7 , 2.8 , 3.9



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5. How many tangents can a circle have?



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6. One card is drawn from a well shuffle deck of 52cards . Calculate the probability that the card will not be an ace.

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Section B

1. Use Euclid's division algorithm to find the HCF of 420 and 130 .

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2. Find the zeros of the quadratic polynomial $3x^2 - x - 4$ and verify the relationship between the zeros and the coefficient .

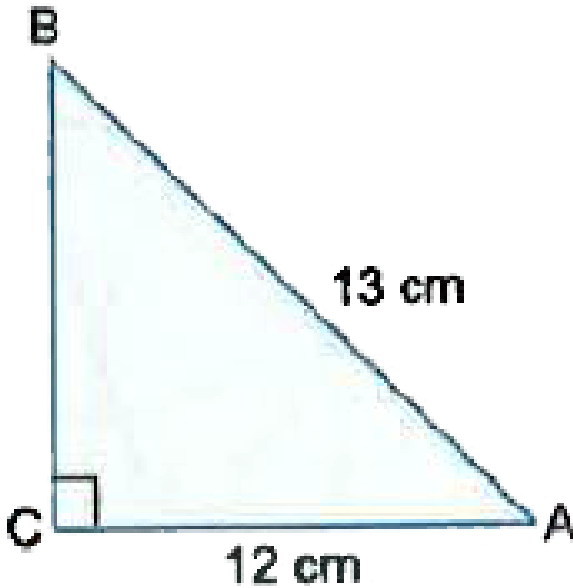
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3. Check whether the equation given below is a quadratic equation

$$x(x + 1) + 8 = (x + 2)(x - 2)$$

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4. In Fig find $\tan A - \cot B$.

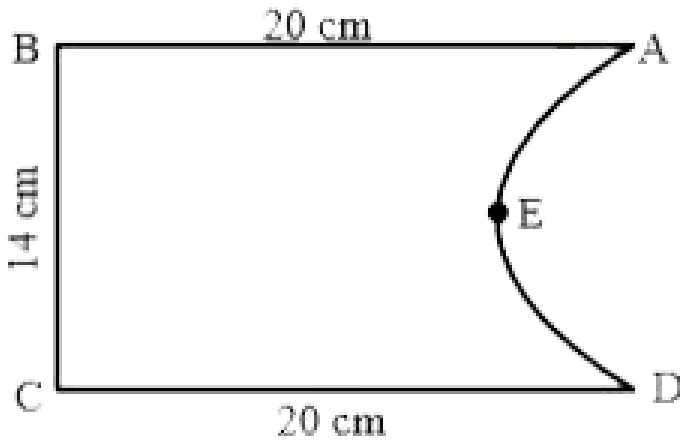


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5. If $\tan(A + B) = \sqrt{3}$ and $\tan(A - B) = \frac{1}{\sqrt{3}}$, $0^\circ < A + B \leq 90^\circ$, $A > B$, find A and B .

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6. Find the perimeter of a given fig, where AED is a semicircle and ABCD is a rectangle.



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1. Use Euclid's division lemma to show that the cube of any positive integer is of the form $9m$, $9m + 1$ or $9m + 8$.

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2. If the remainder on division of $x^3 + 2x^2 + kx + 3$ by $x - 3$ is 21, then find the quotient and the value of k . Hence, find the zeroes of the cubic polynomial $x^3 + 2x^2 + kx - 18$.

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3. The sum of a twodigit number and the number obtained by reversing the digits is 66. If the digits of the number differ by 2, find the number. How many such numbers are there?

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4. A contract on construction job specifies a penalty for delay of completion beyond a certain date as follows: Rs 200 for the first day, Rs 250 for the second day Rs 300 for the third day, etc., the penalty for each succeeding day being Rs 50 more

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5. If the area of ΔABC with vertices $A(x, y)$, $B(1, 2)$ and $C(2, 1)$ is 6 square units, then prove that $x + y = 15$ or $x + y + 9 = 0$.

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6. Find the ratio in which the line segment joining $A(1, -5)$ and $B(-4, 5)$ is divided by the x -axis. Also find the co-ordinates of the point of division.

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7. In figure E is a point on side CB produced of an isosceles triangle ABC with $AB = AC$. If $AD \perp BC$ and $EF \perp AC$, prove that $\triangle ABD \cong \triangle ECF$.

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8. In Fig. 10.13, XY and $X'Y'$ are two parallel tangents to a circle with centre O and another tangent AB with point of contact C intersecting XY at A and $X'Y'$ at B . Prove that $\angle AOB = 90^\circ$

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9. Cards with number 2 to 101 are placed in a box. A card is selected at random. Find the probability that the card has
(i) an even number (ii) a square number

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10. The table below shows the daily expenditure on food of 25 households in a locality.

Dail expenditure (in Rs)	100 – 150	150 – 200	200 – 250	250 – 300
Number of households	4	5	12	2

Find the mean daily expenditure on food by suitable method.

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Section D

1. Due to heavy floods in a state , thousands were rendered homeless, 100 schools of a state collectively offered to the state government to provide place and the canvas for 100 tents to be fixed by the government and decided to share their whole expenditure equally. The lower part of each tent is cylindrical of base radius 2 m and height 2.1 m , with conical upper part of same base radius with a slant height 2.8 m. If the canvas used to make the tent cost Rs 500 per m^2 then find the amount shared by each school to set up the tents.

What value is generated by the above problem ?



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2. Sum of the areas of two squares is $468 m^2$. If the difference of their perimeters is 24 m, find the sides of the two squares.



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3. A ladder is placed against a wall such that its foot is at a distance of 2.5 m from the wall and its top reaches a window 6 m above the ground. Find the length of the ladder.



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4. Find the value of 45° of all trigonometrically ratios geometrically. and evaluate the following $\frac{1 - \tan^2 45^\circ}{1 + \tan^2 45^\circ}$

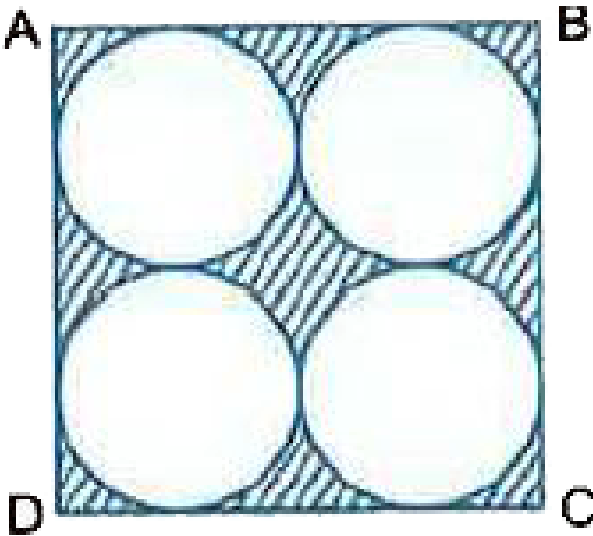


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5. A straight highway leads to the foot of a tower. A man standing at the top of the tower observes a car at an angle of depression of 30° , which is approaching the foot of the tower with a uniform speed. Six seconds later, the angle of depres

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6. Find the area of the shaded region in Fig where ABCD is a square of side 14 cm.



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7. The annual profits earned by 30 shops of a shopping complex in a locality give rise, to the following distribution.

Profit (in laksh ₹)	Number of shops (frequency)
More than or equal to 5	30
More than or equal to 10	28
More than or equal to 15	16
More than or equal to 20	14
More than or equal to 25	10
More than or equal to 30	7
More than or equal to 35	3



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