# MATHS

## BOOKS - VK GLOBAL PUBLICATION MATHS (HINGLISH)

## PRE-MID TERM TEST PAPER

### Section A

**1.** If two positive integers a and b can be expressed as

$a = x^2y^5$ and $b = x^3y^2$, $wherex, y$ are prime numbers, then find LCM of $a$ and $b$.

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**2.** The decimal representation of an irrational number is

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**3.** Find the sum and product of zeros of the quadratic polynomial $ax^2 + bx + c$.

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**4.** Find the point at which, pair of equations $x = a$ and $y = b$ intersects, when graphically represent.

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Section B

**1.** Can two number have 18 as their HCF and 380 as their LCM? Give reason

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**2.** Show that the system of equations $-x + 2y + 2 = 0$ and $\frac{1}{2}x - \frac{1}{2}y - 1 = 0$ has a unique solution.

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**3.** Can $(x - 1)$ be the remainder on division of a polynomial $P(x)$ by $2x + 3$? Justify your answer.

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**4.** Can the number $6^n$, $n$ being a natural number, end with the digit 5? Give reason.

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**5.** Is the pair of equations $x + 2y - 3 = 0$ and $6y + 3x - 9 = 0$ consistent? Justify your answer.

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**6.** Find the zeros of the polynomial $4x^2 - 12x + 9$.

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Section C

**1.** The LCM of two numbers is 14 times their HCF. The sum of LCM and HCF is 600. If one number is 280, then find the other number.

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**2.** Show that the square of an odd positive integer is of the form $8q + 1$, for some integer $q$.

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**3.** If $\alpha$ and $\beta$ are zeroes of the polynomial $6y^2 - 7y + 2$, find the quadratic polynomial whose zeroes are $\frac{1}{\alpha}$ and $\frac{1}{\beta}$

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**4.** For what value of $p$ and $q$, will the following pair of linear equations have infinitely many solutions?

$4x + 5y = 2$

$(2p + 7q)x + (p + 8q)y = 2q - p + 1$

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## Section D

**1.** Draw the graphs of the pair of linear equations

$x - y + 2 = 0$ and $4x - y - 4 = 0$.

Calculate the area of the triangle formed by the lines so drawn and the x-axis.

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**2.** Find the quadratic polynomial, the sum and product of whose zeroes are $\sqrt{2}$ and $-\frac{3}{2}$, respectively Also find its zeroes.

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**3.** Prove that $\sqrt{2}+\sqrt{3}$ is irrational.

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