

NAME Sanskriti Gupta CLASS X B ROLL NO. 39

Time : 1 hr

Max Marks : 30

SET - B

1. Without actually performing the long division, state whether $\frac{19}{80}$ will have a terminating decimal expansion or a non-terminating repeating decimal expansion. (1)
2. What is the geometrical meaning of zeroes of a polynomial? (1)
3. If $\sec 4A = \operatorname{cosec} (A - 20^\circ)$, where $4A$ is an acute angle, find the value of A . (2)
4. Find the HCF of 2053 and 967 using Euclid's Division Lemma. (2)
5. Prove that $\sqrt{5}$ is irrational. (3)
6. Determine the values of p and q for which the following system has infinite solution
 $(2p - 1)x + 3y = 5$; $3x + (q - 1)y = 2$ (3)
7. If α and β are the zeros of the quadratic polynomial $2x^2 - 5x + 7$, then find a polynomial whose zeroes are $2\alpha + 1$ and $2\beta + 1$. (3)
8. Solve : $x + y = a + b$
 $ax - by = a^2 - b^2$ (3)
9. Draw the graphs of the equations $4x - 5y - 20 = 0$ and $4x + 5y - 15 = 0$. Determine the coordinates of the vertices of the triangle formed by these lines and the y -axis, and shade the triangular region and find its area. (4)
10. The shadow of a tower standing on a level ground is found to be 40 m longer when the Sun's altitude is 30° than when it is 60° . Find the height of the tower. (4)
11. Prove the identity $\frac{\sin^3 A}{\sin A - \cos A} + \frac{\cos^3 A}{1 - \tan A} = 1 + \sin A \cos A$ (4)