Sample Question for Class - 10

1. For how many natural number values of N, $N^4 + 4$ will be a prime number ?
    (a) 0   (b) 1   (c) 2   (d) None of these

2. In the figure given , ABCD is a cyclic quadrilateral and AB = 25 cm, BC = 39 cm, CD = 52 cm and AD = 60 cm . What is the diameter of the circle ?
    (a) 60 cm   (b) 65 cm   (c) 72 cm   (d) 78 cm
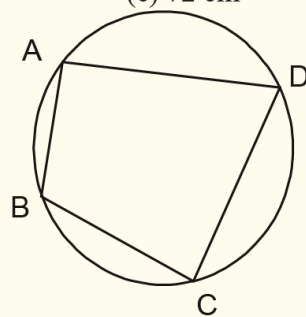
3. How many natural numbers are there which give a remainder of 41 after dividing 1997 ?
    (a) 2   (b) 4   (c) 6   (d) None of these

4. You are selecting 10 numbers randomly out of the first 100 odd numbers . Sum of these 10 odd numbers is N . How manydifferent values of N are possible ?
    (a) 900   (b) 1801   (c) 1800   (d) 901

5. How many values of x will satisfy the following equation :
    $$\sqrt{x+\sqrt{x+\sqrt{x\ldots\ldots\ldots\infty}}} = \sqrt{x.\sqrt{x.\sqrt{x\ldots\ldots\infty}}}$$
    (a) 0   (b) 1   (c) 2   (d) None of these

6. ABC is an equilateral triangle with side length 1 unit . P is any point on the circumcircle of this triangle. What is the value of $AP^2 + BP^2 + CP^2$?
    (a) $\sqrt{2}$ (b) 2   (c) $2\sqrt{2}$ (d) 3

7. How many integral points are contained inside a triangle with the vertices (0, 0) , (21, 0) and (0, 21) ?
    (a) 190   (b) 231   (c) 210   (d) 171

8. In a race on a circular track, A, B and C start from the same point N in the same direction. Their speeds are n m/s, (n+1) m/s and (n+2) m/s respectively where n is a natural number. How many times will they meet before they meet for the first time at point N(n>0, N>0) ?
    (a) 1   (b) 3   (c) 2   (d) None of these

9. The function $f(x) = |x - 2| + |2.5 - x| + |3.6 - x|$, where x is any real number, attains a minimum value at
    (a) x = 2.3   (b) x = 2.5   (c) x = 2.7   (d) None of these