TARGET MATHEMATICS
THE EXCELLENCE KEY
BY MANISH SAXENA

PLEASURE TEST SERIES - X

TEST – 03

Quadratic; AP & Circle

Time : 1 hr] **[Max Marks 25**

Section A

1 Find the value of k for which the roots of the equation $2x^2 - kx + k = 0$ are equal.$[Ans: k = 0, 8]$

2 Find the 4th term from the end of an AP is $-11, -8, -5, \ldots\ldots 49$. $[Ans: 40]$

Section B

3 The 26th , 11th and the last terms of an AP are 0, 3 and $-\frac{1}{5}$ respectively. Find the common difference and the number of terms.$[Ans: -1/5, 27]$

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4 Find whether equation $\frac{1}{2x-3}+\frac{1}{x-5}=1$ have real roots, if real roots exist, find them.

5 Out of the two concentric circles, the radius of the outer circle is 5 cm and the chord AC of length 8 cm is a tangent to the inner circle. Find the radius of the inner circle.

Section C

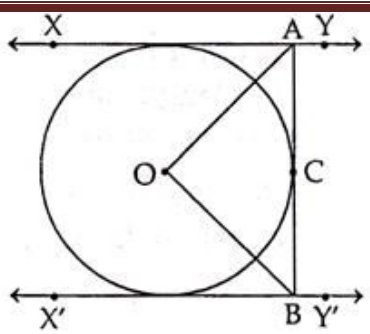
6 If a, b , c are the sides of a right triangle, where c is hypotenuse, then prove that the radius r of the circle which touches the sides of the triangle is given by $r=\frac{a+b-c}{2}$.

7 Split 207 into three parts such that these are in AP and the product of the two smaller parts is 4623.

8 At t min past 2 pm, the time needed by the minute hand of a clock to show 3 pm was found to be 3 min less than $\frac{t^2}{4}$ min. Find t.

Section D

9 XY and $X'Y'$ are two parallel tangents to a circle with centre O and another tangent AB with C as the point of contact intersect XY and $X'Y'$ at A and B respectively . Prove that $\angle AOB=90^o$.



10 Kanika was given her pocket money on Jan 1st 2008. She puts ` 1 on day 1, ` 2 on day 2, ` 3 on day 3 and continued doing so till the end of the month, from this money into her piggy bank shw also spent ` 204 of her pocket money, and found that at the end of the month she still had ` 100 with her. How much was her pocket money for the month?