



18. A card is drawn at random from a pack of 52 playing cards. Find the probability that the card drawn is neither an ace nor a king.

OR

A pair of dice is thrown once. Find the probability of getting the same number on each die.

SECTION-C

19. Using quadratic formula, solve the following equation

$$10ax^2 - 6x + 15ax - 9 = 0, a \neq 0$$

OR

The sum of a number and its reciprocal is $\frac{122}{11}$. Find the number.

20. Find the 10th term from the end of the A.P. 8, 10, 12,, 126

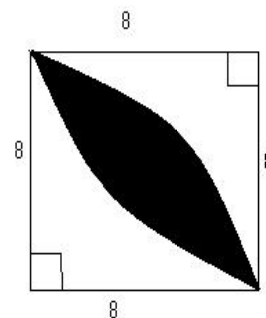
21. A circle is touching the side BC of triangle ABC at P and is touching AB and AC when produced at Q and R respectively. Prove that

$$AQ = \frac{1}{2} (\text{Perimeter of } \triangle ABC)$$

OR

In figure given below, a quadrilateral ABCD is drawn to circumscribe a circle, prove that $AB + CD = AD + BC$

22. Draw a circle of radius 4cm. Draw a pair of tangents to the circle, which are inclined to each other at an angle of 60° .
23. Find the area of the design region in the figure given below, which is common between two quadrant of two circles of radius 8cm each.



24. Water flows at the rate of 10 metre per minute through a cylindrical pipe having its diameter as 0.5 cm. How much time will it take to fill a conical vessel, the diameter of whose base is 40 cm and depth 24 cm ?

OR

A hollow sphere of internal and external diameter 4cm and 8 cm respectively is melted into a cone of base diameter 8 cm. Calculate the height of cone.

25. From the top of a building, the angle of elevation of the top of a tower is 60° and the angle of depression of its foot is 45° . Determine the height of the tower.
26. Find the ratio in which the line $3x + y = 9$ divides the line joining (1, 3) and (2, 7).
27. For what value of m, the points (4,3), (m,1) and (1,9) are collinear?
28. Two dice are thrown simultaneously. Find the probability that sum of the two numbers appearing on the top is less than or equal to 10.