1. find the distance of a point $P(x, y)$ from the origin.
2. what is the value of ($\cos^2 67°$-$\sin^2 23°$) ?
3. Given ΔABC ΔPQR,if $\frac{AB}{PQ}$=$\frac{1}{3}$, then find $\frac{ar\Delta ABC}{ar\Delta PQR}$.
4. Find the ratio in which $P(4, m)$ divides the line segment joining the points $A(2, 3)$ and $B(6, -3)$.Hence find m .
5. Two different dice are tossed together.Find the probability:
   i) of getting a doublet
   ii) of getting a sum 10,of the numbers on the two dice .
6. An integer is chosen at random between 1 and 100.Find the probability that it is:
   i) divisible by 8 .
   ii) not divisible by 8 .
7. Find HCF and LCM of 404 and 96 and verify that $HCF \times LCM =$ product of two given numbers .
8. Find the zeros of the polynomial$(2x^4 - 9x^3 + 3x - 1)$.If two of its zeros are $(2 + \sqrt{+}3)$ and $(2 - \sqrt{+}3)$.
9. If $A(-2, 1)$,$B(a, 0)$,$C(4, b)$ and $D(1, 2)$ are the vertices of a parallelogram $ABCD$,find the values of a and b.Hence find the length of its side.
10. If $A(-5, 7)$,$B(-4, -5)$,$C(-1, -6)$ and $D(4, 5)$ are the vertices of a quadrilateral,find the are of the quadrilateral $ABCD$.
11. If $4 \tan\theta = 3$,evaluate$(\frac{4\sin\theta - \cos\theta + 1}{4\sin\theta + \cos\theta - 1})$.
12. If $(\tan 2A) = \cot(A - 18°)$ where $(2A)$is an acute angle, find the value of (A).
13. Find the area of the shaded region in fig 2,where areas drawn with centers A ,B ,C and D intersect in pair at mid-points.P, Q, R and S of the sides AB,BC,CD and DA respectively of a square $ABCD$ of side $12cm$.[$use\pi = 3.14$] .

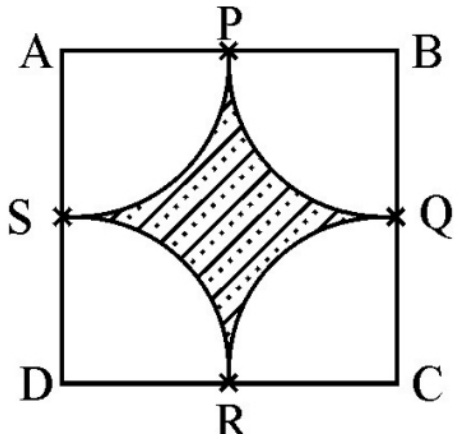

Figure 1: square

14. Prove that $\frac{\sin A - 2\sin^3 A}{2\cos^3 A - \cos A} = \tan A$.

15. The diameters of the lower and upper ends of a bucket in the form of a frustum of a cone are $10cm$ and $30cm$ respectively.If its height is $24cm$,find:

    i) The area of the meta sheet used to make the bucket.

    ii) Why we should avoid the bucket made by ordinary plastic? [$use\pi = 3.14$]

16. As observed from the top of a $100m$ high light house from the sea-level,the angles of depression of two ships are $30°$ and $45°$.If one ship is exactly behind the other on the same side of the light house,find the distance between the two ships.[$use\sqrt{3} = 1.732$].

17. The mean of the following distribution is 18.Find the frequency f of the c lass $19 - 21$.

class	11-13	13-15	15-17	17-19	19-21	21-23	23-25
frequency	3	6	9	13	f	5	4

18. The following distribution gives the daily income of 50 workers of a factory:

DailyIncome$(in\|)$	100-120	120-140	140-160	160-180	180-200	
Number of workers	12	14	8	6	10	

19. Convert the distrubution above to a less than type cumulative frequency distribution and draw its ogive.