Revision Worksheet   Mathematics   Class IX
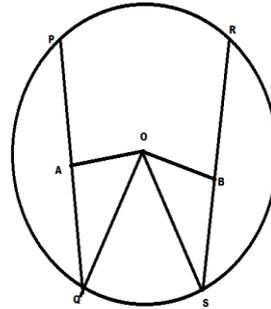
Q1) If $a^2+b^2+c^2 = 74$ and ab+bc+ca = 61,find a+b+c.

Q2)Find the compound interest on Rs 12000 for 2 years at 5% per annum.

Q3) PQ is a straight line of 13 units.If P has the coordinates (5, -3) and Q has the coordinates (-7,y); find the values of ' y'.

Q4) In the figure A and B are the mid points of two equal chords, PQ and RS respectively of a circle

with centre O. Prove that $\Delta OAQ \cong \Delta OBS$.

Q5)The following observations 40,42,45,x-1,x+1,51,54,62 are arranged
in ascending order. If the median is 49,find the value of x. Hence find
the mean of the above observations.

Q6) Without using trigonometrical tables, evaluate:

$\dfrac{5\ Cos\ 0-2\ Sin\ 30+\sqrt{3}\ Cos\ 30}{\tan 30\ X \tan 60\ X\ Cos\ 60}$ + 3 Sin 29 Sec 61

Q 7) Simplify: $(i)[\dfrac{27}{125}]^{\frac{1}{3}}$ x $[\ (\ \dfrac{3}{2}\ )^{-2}$ - $(\ \dfrac{2}{5}\ )^3\ ] - 4\ (\ \dfrac{3}{7}\ )^0$ (ii) $\dfrac{2\ \sqrt{3}-\sqrt{2}}{2\ \sqrt{3}+\sqrt{2}}$

Q8) In the given diagram'O' is the centre of the circle. Chord AB is parallel to chord CD , AB = 64cm, CD= 48cm and radius of the circle is 40cm. Find the distance between the two chords.
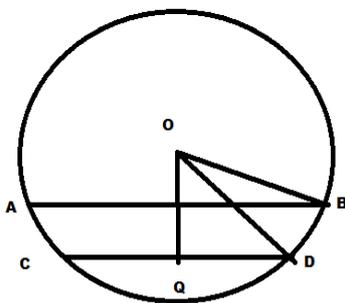
Q9)Using a graph sheet draw a frequency polygon to represent the following data:

Class	25-35	35-45	45-55	55-65	65-75	75-85
Frequency	5	8	12	9	6	4

Q10) In the following figure ABCD is a quadrilateral. All the measurements are   in cm. Find

(i) Area of ΔABC
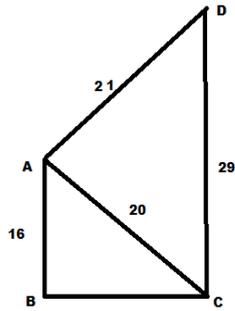
(ii) Area of ΔACD
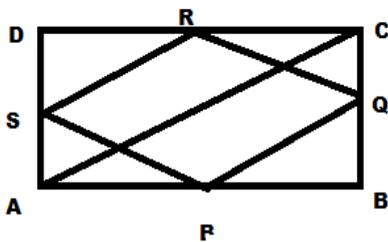
(iii) Area of quadrilateral ABCD.

Q11) Simplify:

$$\log \frac{81}{8} + 2 \log \frac{2}{3} - 3 \log \frac{3}{2} + \log \frac{3}{4}$$

Q12) Factorise : $5 (3a + b)^2 + 6 (3a + b) - 8$

Q13) In the figure ABCD is a rectangle P, Q, R and S are the mid points of the sides AB, BC, CD and AD respectively.
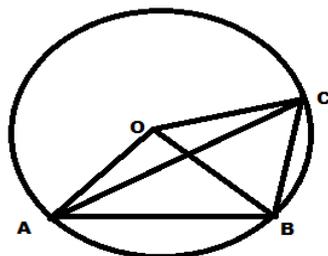
(i) Prove that PQRS is a rhombus.

(ii) If the length of Ac is 6cm, find the perimeter of PQRS.

Q14) If $\cot \theta = \frac{5}{12}$, find $\frac{5 \sin\theta - 3 \cos\theta}{5 \sin\theta + 3 \cos\theta}$

Q15) In the given figure, ' O' is the centre of the circle and the length of arc AB is twice the length of arc BC, If ∠ AOB = 104, find :

(i) ∠ BOC

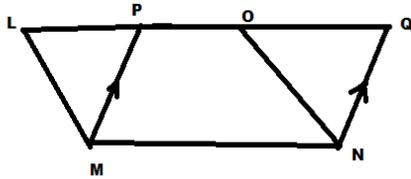(ii) ∠ OAC (iii) ∠ BAC

Q16) Evaluate : tan12 tan38 tan 52 tan60 tan 78

Q 17) In the figure area of parallelogram LMNO is 240sq cm. Find the area of :

(i) parallelogram PMNQ

(ii) Δ PMQ

Q 18) A machine was purchased 2 years ago. Its value depreciates at the rate of 10% per annum . If its present value is Rs 64800, find its price 2 years ago.

Q 19) Solve for n: $(3^n \text{ x } 9^{n+1}) - (3^{n-1} \text{ x } 27^{n-1}) = 81$

Q 20) ABCD is a parallelogram . Prove that the diagonals AC and Bd bisect each other.
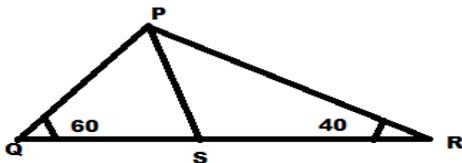
Q21) Solve the following simultaneous linear equations graphically:

   $8 x + 5 y = 9$; $3x + 2y = 4$

Q22) The present ages of a father and his daughter is x years and y years respectively. Three years hence father will be three times as old as his daughter. Seven years ago he was seven times as old as his daughter. Find their present ages.

Q 23) Factorise : $a^2 - 4 b^2 + a^3 - 8b^3 - (a - 2b)^2$

Q 24) In the given figure, PS bisects ∠P . Arrange PQ , QS and SR in the descending order of their lengths.

Q 25) Verify that Cos 60 $= 1 - 2 Sin^2 30 = 2 Cos^2 30 - 1$