

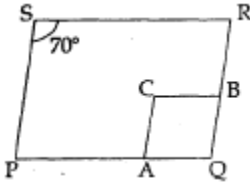
General Instructions:

1. All questions are compulsory.
2. The question paper consists of 31 questions divided into five sections A, B, C, D and E. Section – A comprises of 4 questions of 1 mark each, Section – B comprises of 6 questions of 2 marks each, Section – C comprises of 8 questions of 3 marks each and Section – D comprises of 10 questions of 4 marks each. Section – E comprises of two questions of 3 marks each and 1 question of 4 marks from Open Text theme.
3. There is no overall choice.
4. Use of calculator is not permitted.

SECTION – A

Question numbers 1 to 4 carry one mark each.

1. Find whether $(-2, 2)$ is a solution of $y - x = 0$.
2. Find a point on x - axis from where graph of linear equation $x - 5y = 3$ will pass.
3. In the figure, PQRS and AQBC are parallelograms. If $\angle S = 70^\circ$, find $\angle ACB$.

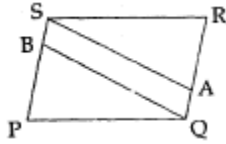


4. Find the total surface area of a solid hemisphere with radius 7 cm.

SECTION – B

Question numbers 5 to 10 carry two marks each.

5. PQRS is a trapezium with $PQ \parallel RS$. Diagonals PR and QS intersect each other at Y. Show that $\text{ar}(\triangle RYQ) = \text{ar}(\triangle SYP)$.
6. Draw any exterior angle of a triangle. Using compass, bisect it.
7. In the figure, PQRS is a parallelogram. If A and B are points on QR and PS respectively such that $QA = \frac{1}{3}QR$ and $SB = \frac{1}{3}SP$, show that QASB is also a parallelogram.

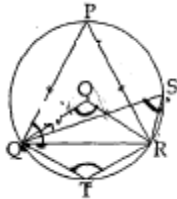


8. The perimeter of one face of cube is 20 cm. Find volume.
9. The probability of guessing the correct answer to a certain question is $\frac{x}{3}$. If the probability of not guessing the correct answer is $\frac{5x}{3}$, then find the value of x .
10. The probability of guessing the correct answer to a certain question is $\frac{x}{3}$. If the probability of not guessing the correct answer is $\frac{3x}{2}$, then find the value of x .

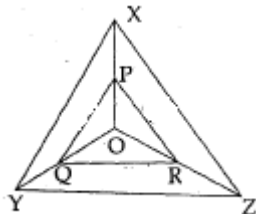
SECTION – C

Question numbers 11 to 18 carry three marks each.

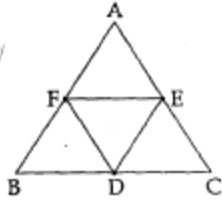
11. Draw the graph of the linear equation whose solutions are represented by the points whose sum of x coordinate and twice of y – coordinate is always equal to 2. Also find the area of the triangle formed by this graph and the axes.
12. Write the equation $y = 7$ in the form $ax + by + c = 0$ and find coordinates of the point where its graph cuts y – axis. Also find another solution of the given equation.
13. In $\triangle DEF$; A, B and C are mid – points of EF, DF and DE respectively. If $\text{ar}(\triangle BAF) = 24 \text{ cm}^2$, find $\text{ar}(\triangle FBC)$.
14. In the figure, if O is the centre of the circle. $\triangle PQR$ is an isosceles triangle with $PQ = PR$ and $\angle PQR = 40^\circ$, find the measures of $\angle QSR$, $\angle QTR$ and $\angle QOR$.



15. Construct an angle of $52\frac{1}{2}^\circ$, using compass and ruler.
16. P, Q and R are the mid – points of XO, YO and ZO respectively as shown in the figure. If $PQ = 4 \text{ cm}$, $QR = 6 \text{ cm}$ and $PR = 8 \text{ cm}$, then find the lengths of the sides of $\triangle XYZ$.



17. In the given figure, D, E and F are the mid – points of the sides BC, CA and AB respectively of a triangle ABC. Show that $\text{ar}(\triangle DEF) = \frac{1}{2} \text{ar}(\triangle ABC)$.

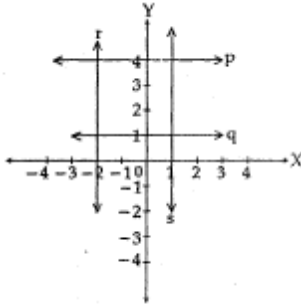


18. The radius and height of a cylinder are in the ratio 5 : 7. If its volume is 4400 cm^3 , find the radius of the cylinder.

SECTION – D

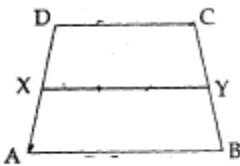
Question numbers 19 to 28 carry four marks each.

19. Cost of 1 pen is Rs. x and that of 1 pencil is Rs. y . Cost of 2 pens and 3 pencils together is Rs. 18. Write a linear equation to represent this information. Draw the graph for the same.
20. Write the equation of the lines drawn in the following graph:

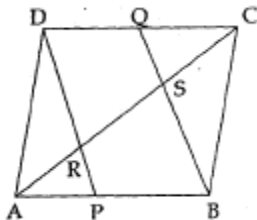


Also, find the area enclosed between them.

21. ABCD is a trapezium with $AB \parallel DC$. X and Y are the mid – points of sides AD and BC respectively. If $CD = 30 \text{ cm}$ and $AB = 50 \text{ cm}$, show that $\text{ar}(\text{DCYX}) = \frac{7}{9} \text{ar}(\text{XYBA})$



22. Prove that the quadrilateral formed by bisectors of the interior angles of a cyclic quadrilateral is also cyclic.
23. Construct ΔPQR in which $\angle Q = 105^\circ$, $\angle R = 30^\circ$ and its perimeter is 12.5 cm.
24. In a parallelogram ABCD, P and Q are the mid – points of sides AB and CD respectively as shown in the figure. Show that the line segments DP and BQ trisect diagonal AC.



25. A conical heap is formed when a farmer pours food grains on a ground. The slant height of heap is 35 cm. The circumference of the base is 132 cm. What amount of tarpaulin is needed to cover the grains? Farmer goes to the orphanage and gives half of the food grains for the children living there. How much grains farmer donated? List values you learn from this act.
26. A conical tent is made of 4.5 m wide tarpaulin. Vertical height of the conical tent is 4 m and base radius is 3 m. Find the length of the tarpaulin used, assuming that 10% extra material is required for stitching margins and wastage in cutting. (Take $\pi = 3.14$)
27. Water is supplied to a city population from a river through a cylindrical pipe. The diameter of cross section of pipe is 20 cm, the speed of water through the pipe is 18 km per hour. Find the quantity of water in litres which is supplied to the city in 4 hours.
28. In class IX of 50 students second language opted by the students is as follows:
 Sanskrit – 14
 Japanese – 08
 French – 12
 Urdu – 6
 Rest of them opted for German.
 A student is selected at random. Find the probability that the student:
- Opts for French
 - Does not opt for Japanese.
 - Either opts for Sanskrit or for German.

SECTION – E

Theme: Atithidevo Bhavah

29. Refer to Figure – 1 and answer the following questions:
- What is the difference in the percentage share of FTA in the months of March and October?
 - Do you think these months are favourite with the tourists? If yes, why?
30. For graphical representation of FTA during the years 2000 – 2011, which is more suited – bar graph or histogram? Why?
31. Refer to Table – 2 Arrival of foreign tourists in India from different regions.
- Draw a bar diagram for arrival of foreign tourists in India from different regions in 2011 taking number of foreign tourist arrivals (in Lakh approx.) on horizontal line and regions on the vertical line.
 - State the difference of maximum arrival and minimum arrival of different regions in 2011 in thousands.