

KENDRIYA VIDYALAYA SANGATHAN
(PATNA REGION)

SUMMATIVE ASSESSMENT – II, 2015

CLASS - IX

TIME – 3½ HOURS

SUBJECT – MATHEMATICS

MAX. MARKS – 90

SECTION - A (खंड अ)

1. How many solutions does the equation $y = 5x + 2$ have ?
2. Write the equation $2x = 6 - y$ in the standard form of a linear equation in two variables.
3. Area of a parallelogram is 64 cm^2 . If base of the parallelogram is 16 cm, find the length of the corresponding altitude.
4. What is the probability of getting 7 when we throw a dice?

SECTION B(खंड ब)

5. Using ruler and compass construct an angle of measure 75° .
6. The base radius and the height of a right cylinder are 10.5cm and 16cm respectively. Find its curved surface area.
7. A hemispherical bowl made of iron has inner radius 7cm. Find the cost of polishing inner hollow portion of bowl at the rate of Rs. 10 per 100cm^2 .
8. If the total surface area of a cube is 96cm^2 , then find its volume.
9. How much water in litres can a hemispherical tank of radius 15 cm hold?
10. Find the cost of white washing four walls of the room of length 6m, breadth 5m and height 2m at the rate of Rs. 6.50 per m^2 .

SECTION C(खंड स)

11. Write Y in terms of X for the equation $x - y + 4 = 0$. Also draw graph of the linear equation.

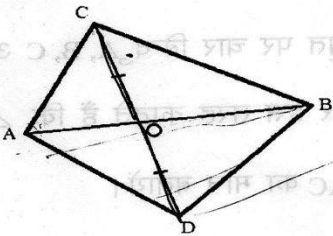
12. Verify whether following points are solutions of equation $x + 3y = 7$ or

not: i) (3,1) ii) (0,7) iii) (1,2)

13. Prove that parallelograms on the same base and between the same parallels are equal in area.

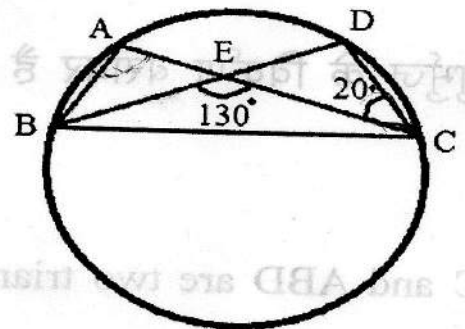
14. If the diagonals of a parallelogram are equal, then show that it is a rectangle.

15. In the given figure, $\triangle ABC$ and $\triangle ABD$ are two triangles on the same base AB . If line segment CD is bisected by AB at O , show that $\text{ar}(\triangle ABC) = \text{ar}(\triangle ABD)$.



16. If two equal chords of a circle intersect within the circle, prove that the segments of one chord are equal to corresponding segments of the other chord.

17. In the given figure A, B, C and D are four points on a circle. AC and BD intersect at point E such that $\angle BEC = 130^\circ$ and $\angle ECD = 20^\circ$. Find $\angle BAC$



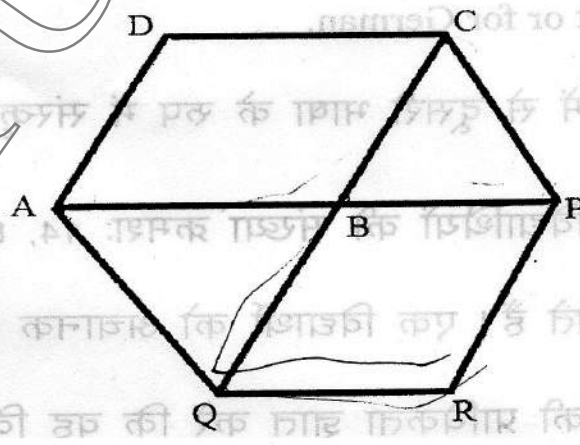
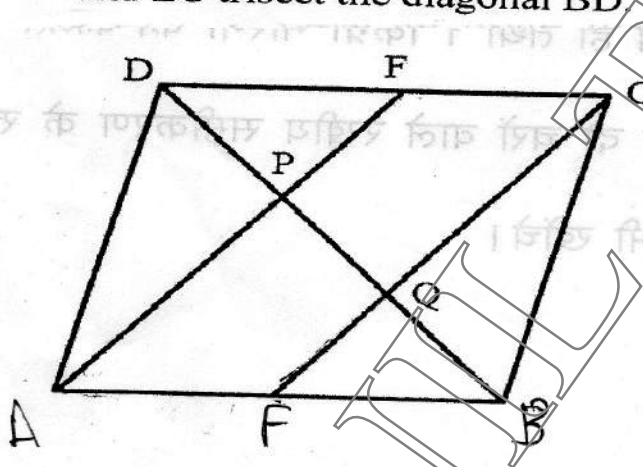
18. Eleven bags of wheat flour, each marked 5kg actually contain the following weight of flour (in kg) 4.97, 5.05, 5.08, 5.03, 5.00, 5.06, 5.08, 4.98, 5.04, 5.07, 5.00.

Find the probability that any one of these bags chosen at random contains

i) more than 5kg ii) equal to 5kg iii) less than 5kg of flour.

SECTION- D (खंड द)

19. The cost of 3kg apples and 3kg oranges is Rs. 270. Let cost of 1kg apple be Rs. X and that of 1 kg oranges be Rs Y. write the given data in the form of a linear equation in two variables. Also represent it graphically.
20. At what points the line $3x - 4y = 12$ intersects x-axis and y-axis. Also find the coordinates of the point on the line, when $x = 2$ and $y = 6$.
21. Prove that the line segment joining the mid points of two sides of a triangle is parallel to the third side and half of it.
22. Construct a triangle ABC in which $BC = 7\text{cm}$, $\angle B = 75^\circ$ and $AB + AC = 13\text{ cm}$. Measure $\angle A$ and $\angle C$ also.
23. In a parallelogram ABCD, E and F are the mid points of sides AB and CD respectively (figure given below). Show that the line segments AF and EC trisect the diagonal BD.



24. In the given figure, the side AB of a parallelogram ABCD is produced to any point P. A line through A parallel to CP meets CB produced at Q and then a parallelogram PBQR is completed. Show that $\text{ar}(ABCD) = \text{ar}(PBQR)$.
26. In class IX of 50 students, following is the distribution of the second language opted by students:- Sanskrit – 14, Japanese – 8, 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
- opts for Japanese
- either opts for Sanskrit or for German.

27. The slant height and the diameter of a conical tomb are 25m and 14m respectively. Find the cost of constructing it at a rate of Rs 25 per m^3 and also the cost of white washing its curved surface at Rs.16 per m^2 .

28. A social organization supplies soup daily to each of the patients of a nearby hospital in cylindrical bowls of diameter 7cm each. If the bowl is filled with soup to height 4cm and the number of patients in the hospital is 300, find how much soup is supplied by the organization to the hospital daily. What value is indicated by this action?

Class-IX-Math.