

SUMMATIVE ASSESSMENT – II, MATHEMATICS, Class – IX

SAMPLE QUESTION PAPER

Time allowed: 3 hours

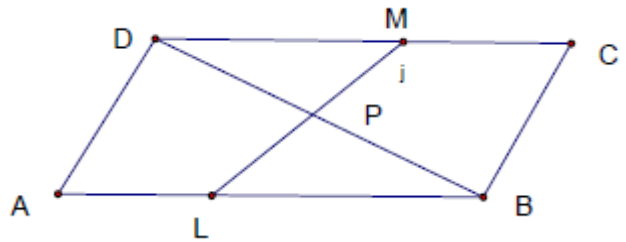
Maximum Marks: 90

SECTION – A

- Q.1 Write the coordinates of points where the line $3x + 4y = 12$ meets x-axis and y-axis.
 Q.2 Two coins are tossed simultaneously find the probability of getting at least one tail.
 Q.3 The diameter of moon is approximately one fourth of the diameter of the earth; Find the ratio of their surface area.
 Q.4 Show that area of parallelogram is twice the area of triangle if they lie between same parallels and having same base.

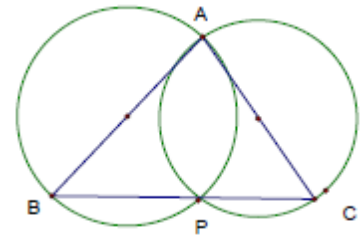
SECTION – B

- Q.5. The cost of a notebook is twice the cost of a pen. Write a linear equation in two variables to represent this statement. Also write any two solutions for the linear equation.
 Q.6. Check whether the points $(1, 2)$, $(-1, -16)$, $(3, -7)$ lie on the line $y = 9x - 7$.
 Q.7. ABCD is a 'llgm.' L and M are points on AB and CD such that $AL = CM$. Prove that LM and BD bisect each other.



- Q.8. In ΔABC , D, E, F are midpoints of BC, AC, AB show that $\text{ar}(\Delta DEF) = \frac{1}{4} \text{ar}(\Delta ABC)$.

- Q.9. AB & AC are diameters of the circles which intersect each other at A and P. Show that points B, P, C are collinear.



- Q.10 The circumference of the base of 12 m high wooden solid cone is 66m, find its volume.

SECTION – C

- Q.11 If the cost of 5 tables exceeds the cost of 8 chair by Rs 150, Represent a linear equation in two variables, Also find the cost of one table if the cost of one chair is Rs 240.
 Q.12 Show that isosceles trapezium is a cyclic quadrilateral.
 Q.13 P, Q, R, S are the midpoints of AB, BC, CD, DA of quadrilateral ABCD show that PQRS parallelogram.
 Q.14 Prove that the diagonals of a parallelogram divide it into two congruent triangles.
 Q.15 Diagonals AC and BD of quadrilateral ABCD intersect at O such that $OB = OD$. If $AB = CD$ then show that $\text{ar}(\Delta DOC) = \text{ar}(\Delta AOB)$
 Q.16 Construct a triangle ABC, in which $BC = 6.8$ cm, $\angle B = 30^\circ$ and $AB + AC = 9.8$ cm.
 Q.17 An edge of a cube is increase by 10%. Find the percentage by which the surface area of the cube increase.
 Q.18 The following table shows the performance of two sections of 80 students in a mathematics test of 90 marks. Draw histogram and frequency polygon of the given data:

Marks	20-30	30-40	40-50	50-60	60-70	70-80	80-90
Number of students	2	3	12	21	14	17	11

- Q.19 The mean marks scored by 100 students were 40. Later on, it was discovered that score of 53 was misread as 83. Find correct mean marks.
 Q.20 Find mean, median and mode of the following data : 15, 14, 19, 20, 14, 15, 16, 14, 15, 18, 14, 19, 15, 17, 15

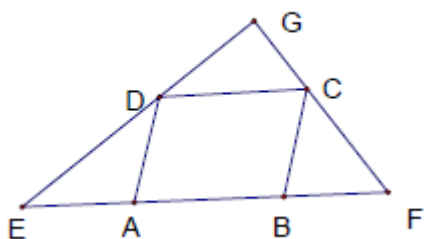
SECTION – D

Q.21 The taxi fare in a city for first kilometer is Rs.18 and for subsequent distance it is Rs.10 per km taking the distance covered as x km. fare as Rs. y , write a linear equation for this information. If a person covers distance of 25km.find the taxi fare.

Q.22. Draw the graph of the equation $2x + 3y - 6 = 0$,

(i) determine whether $(3, 0)$ is the solution, (ii) find value of y , if $x = -3$, (iii) find x , if $y = -2$ and verify these values from graph.

Q.23 In given figure ABCD is the rhombus $AE=BF=AB$ prove that $\angle EFG = 90^\circ$



Q.24 ABCD is trapezium with $AB \parallel DC$. A line parallel to AC intersects AB at X, BC at Y. Prove that $ar(ADX) = ar(ACY)$.

Q.25 Prove that the angle subtended by an arc at the centre is double the angle subtended by it on any point on the remaining part of the circle.

Q.26 Construct a triangle PQR, in which $\angle Q = 45^\circ$ and $\angle R = 60^\circ$, $PQ+QR+PR = 11.2$ cm.

Q.27 A cylindrical tub of radius 12 cm contains water to a depth of 20 cm. A spherical ball is dropped into the tub raising the level of water by 6.75 cm. What is the radius of the ball?

Q. 28 Find the volume of largest sphere carved out from a cube of side 14cm. The above question was given in the class to test the understanding of students. One of the students was not able to understand about the largest sphere so she copied from her friend and showed the answer to teacher

i) In your opinion has she done the right thing ii) Which value does the student lacking? iii) Solve the question

Q.29. Find the cost of sinking a tube well 280m deep having diameter 3m at the rate of Rs. 3.60 per m^3 Find the cost of cementing its inner curved surface area at the rate of Rs. 2.50 per m^2 .

Q.30. A die is thrown 1000 times with a frequencies for outcomes 1, 2,3,4,5 and 6 as given in the following table.

Outcomes	1	2	3	4	5	6
Frequencies	179	150	157	149	175	190

Find the probability as getting: (i) Prime number as a outcome (ii) Number greater than 5 as an outcome (iii) Number not less than 3 as an outcome

Q.31 The mean of the following distribution is 50. Find the value of a and the frequencies of 30 and 70

X	10	30	50	70	90
f	17	$5a+3$	32	$7a-11$	19