

New Question paper added for class 9 Maths sa-2 for March 2016
SUMMATIVE ASSESSMENT – II, (2015- 16)

MATHEMATICS

Class – IX

Time allowed : 3 to 3 1/2 hours

Maximum Marks: 90

General Instructions:

- (i) All questions are **compulsory**.
- (ii) 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 **4** marks each. **Section E** comprises of **two** questions of **3 marks** each and **1** question of **4 marks** from **Open Text** theme.
- (iii) There is no overall choice.
- (iv) Use of calculator is not permitted.

Section A

(Question numbers 1 to 4 carry 1 mark each)

1. Find a solution for the equation.
 $3x - 8y = 27$
2. In fig. 1, AOB is a diameter of the circle and $AC = BC$, find $\angle CAB$.

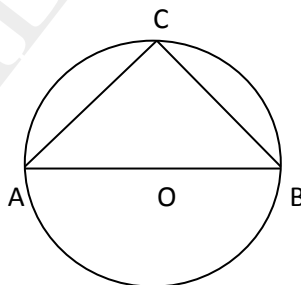


Fig. 1

3. In fig. 2, if the area of the parallelogram ABCD is 30 cm^2 , then find the length of the altitude AQ.

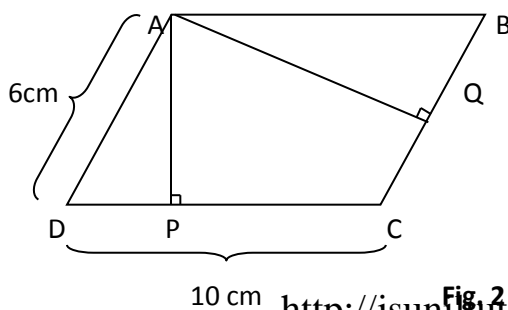


Fig. 2

<http://jsuniltutorial.weebly.com/>

4. Out of 25 students, participating in a quiz competition 10 are girls. Find the probability that the winner is a boy.

Section B

(Question numbers 5 to 10 carry 2 marks each)

5. Express the linear equation $6 = 4x$ in the form $ax+by+c = 0$ and indicate the value of a , b and c
6. Three coins are tossed simultaneously 200 times with the following frequencies of different outcomes.

outcomes	3 Heads	2 Heads	1 Head	3 Tails
Frequency	23	84	71	22

Find the probability of getting:

- a) 3 Heads
 - b) No Heads
7. If the surface area and volume of a sphere are equal, find the diameter of the sphere.
8. If the point $(2,-5)$ lies on the graph of the equation $2ax-y = 1$, find the value of ' a '.
9. The record of a weather station shows that out of the past 275 consecutive days, its weather forecasts were correct 170 times:
- (i) What is the probability that on a given day it was correct?
 - (ii) What is the probability that it was not correct on a given day?
10. In fig.3 A, B and C are three points on a circle such that the angles subtended by the chords AB and AC at centre O are 80° and 120° respectively. Determine $\angle BAC$.

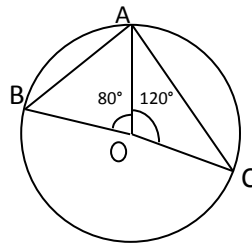


Fig. 3

Section C

(Question numbers 11 to 18 carry 3 marks each)

11. If the number of hours for which a labourer works is x and y are his wages (in Rupees) and $y = 2x - 1$, draw the graph of work-wages equation. From the graph, find the wages of the labourer if he works for 6.
12. If the diagonals of a parallelogram are equal, then prove that it is a rectangle.
13. Prove that parallelograms on the same base and between the same parallels are equal in area.
14. Construct a triangle ABC in which $BC = 4\text{ cm}$ and $\angle B = 60^\circ$ and $AB + AC = 6\text{ cm}$.
15. If two circles intersect in two points, prove that the line through the centres is the perpendicular bisector of common chord.
16. The diameter of the roller is 84 cm and its lengths are 124 cm . It takes 500 complete revolutions to move once over to level a play ground. Find the area of the play ground in m^2 .
17. A right triangle ABC with sides 5 cm , 12 cm and 13 cm is revolved about the side 12 cm . Find the volume of the solid so obtained.
18. The percentage of marks obtained by a student in the monthly unit test are given below:

Unit test	I	II	III	IV	V
% of marks	58	64	76	62	85

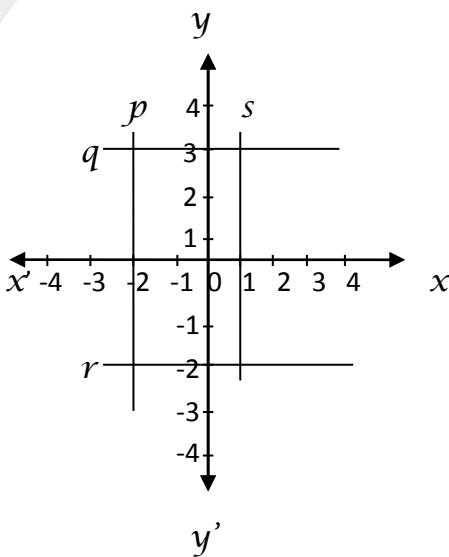
Find the probability that the student gets:

- a) at least 60% of marks
- b) marks between 70% and 80%
- c) less than 65%

Section D

(Question numbers 19 to 28 carry 4 marks each)

19. Prove that the angle subtended by an arc at the centre is double the angle subtended by it at any point on the remaining part of the circle.
20. Construct a triangle with perimeter 10cm and base angles 60° and 45° . Write the steps of construction.
21. Rohini and Fatima are two students of class IX of a school, together contributed Rs 100 towards the Prime Minister's relief Fund to help the flood victims. Write a linear equation which satisfies this data. (You may take their contributions as Rs X and Rs y) Draw the graph of the same. Explain the value depicted here by them.
22. The dome of a building in the form of a hemisphere. Its radius is 6.3m . Find the cost of painting it at the rate of Rs $12/\text{m}^2$.
23. A solid cube of side 12cm is cut into eight cubes of equal volume. What will be the side of the new cube? Also, find the ratio between their surface areas.
24. Curved surface of a cone is 308cm^2 and its slant height is 14cm . Find (a) radius of the base (b) height of the cone (c) total surface area of the cone
25. In a quadrilateral PQRS $\angle P = 40^\circ$, $\angle Q : \angle R : \angle S = 4:5:7$. Find the measures of these angles. What type of quadrilateral is it? Give reasons.
26. Write the equations of the lines drawn in the following graph. Also, find the area enclosed between them.



27. ABCD is a parallelogram and AP and CQ are perpendiculars from vertices A and C on diagonal BD. Show that:
- (i) $\triangle APB \cong \triangle CQD$
 - (ii) $AP = CQ$

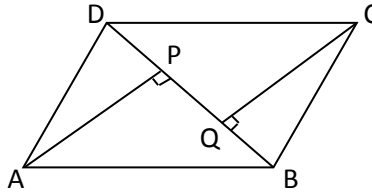


Fig. 4

28. XY is a line parallel to side BC of a triangle ABC. If BE \parallel AC and CF \parallel AB meet XY at E and F respectively, show that $\text{ar}(\text{ABE}) = \text{ar}(\text{ACF})$.