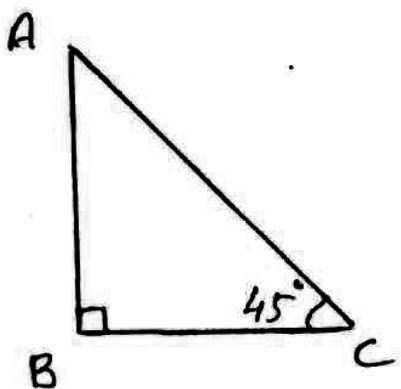




Subject:	MATHEMATICS – SET II	Class:	X	Type :	Descriptive	Batch	LOT
No. of Questions:	21	Mark:	80	Time:	2.5 hrs.	Date :	16/05/2020

1 to 3. Each question carries 2 marks.

- If $(x - 10)$ is a factor of $p(x) = x^2 - 7x - 30$, find next factor.
- If $AC = 8\text{cm}$, find AB and BC .



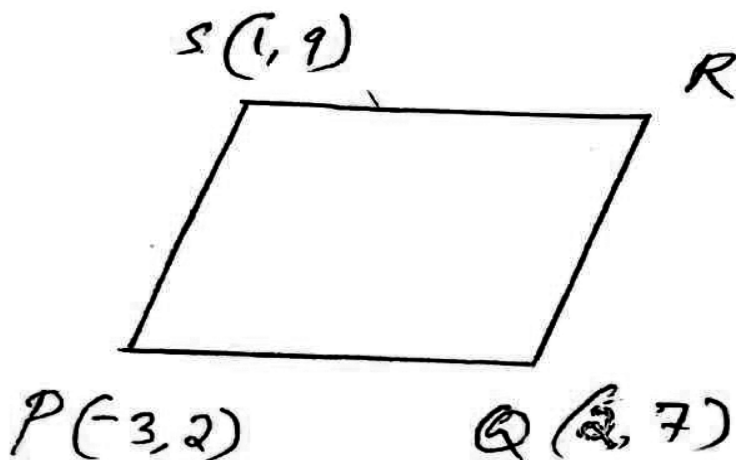
- Draw coordinate axes and mark $(0, 3)$, $(-2, 1)$, $(3, -3)$

4 to 8. Each question carries 3 marks

- If n^{th} term of a sequence is $2n - 5$,
 - First term?
 - Common difference?
 - 29^{th} term?
- The inradius of a right triangle is 3 cm and hypotenuse is 21 cm.
 - Perimeter of triangle?
 - Area of triangle?
- One is asked to say a two digit number. What is the probability of
 - Both digits being different?

b) The first digit being larger?

7. In parallelogram PQRS, Find the length of PR?

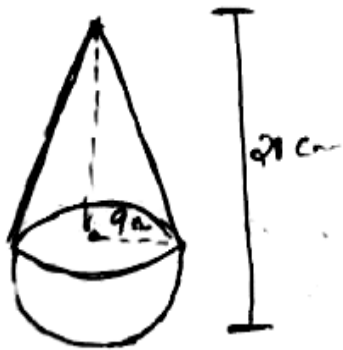


8. Sum of first 'n' even numbers is 650. Find number of terms.

9 to 15 Each question carries 4 marks

9. Draw an isosceles triangle of equal sides $2\sqrt{5}$ cm.

10.



- a) Height of cone?
- b) Volume of cone?
- c) Slant height of cone?
- d) T.S.A. of the solid?

11. Coordinate of a point which is on a line parallel to x axis is $(-3, 4)$.
Coordinate of a point which is on a line parallel to y axis is $(3, -4)$
a) Draw coordinate axes and mark these points?
b) Write the coordinates of the intersecting point of above two lines?
c) Find the distance between this point and the origin.
12. All terms of an Arithmetic sequence with common difference 4 are positive integers.
If product of two consecutive terms of this sequence is equal to their sum,
a) If one term is x , write next term?
b) Find the terms?
13. A line is drawn through the points $(0, 2)$ and $(2, 4)$
a) What is the slope of the line?
b) Find the coordinate of another point on this line?
c) Prove that y coordinate of any point on this line is 2 more than the x coordinate.
d) Write the coordinate of the point where this line cuts x axis.
14. $(x - 1)$ and $(x - 2)$ are the factors of the polynomial $x^3 - ax^2 - bx - 4$. Find the value of a and b .
15. Draw a circle of radius 3 cm. draw a triangle of angles 55° , 60° and 65° with all its sides touches the circle.

16 to 20 Each question carries 5 marks

16. A metal sphere of diameter 42 cm is melted and recast to make a rod of diameter 28 cm. find the length of the rod?
17. There are 60 students in a class among which 30 are boys. In another class there are 50 students among which 25 are boys. If one from each class is selected,
a) What is the probability of both being boys?
b) What is the probability of both being girls?
c) What is the probability of being atleast one girl?
d) What is the probability of being at least one boy?
e) What is the probability of being one boy and one girl?
18. While a tower was built, a man 1.7 m tall saw its top at an angle of elevation of 30° .
The tower was completed by building up 15 m more and then the man saw its top

from the same spot at an angle of elevation of 60° . Draw a rough figure showing these facts. What is the total height of the tower?

19. Draw triangle ABC with $AB = 6 \text{ cm}$, $AC = 6 \text{ cm}$ and $\angle A = 65^\circ$. Draw its incircle. Measure the radius of the incircle.

20. The table below shows children in a camp sorted according to their height.

Height (cm)	No. of children
130 – 135	8
135 – 140	12
140 – 145	10
145 – 150	15
150 – 155	17
155 – 160	11
160 – 165	7
165 – 170	5

a) Which of the child's height should be taken as median height?

b) What will be the height of the 31st child?

c) Find the median height of the children

21. Read the following, understand the mathematical idea expressed in it and answer the questions that follow. (6)

When natural numbers are divided by 3, the remainders will be either 0, 1 or 2. If the natural numbers are grouped according to this remainder each of them will be in one of the following three groups.

Group A : 3, 6, 9, 12, 15,

Group B : 1, 4, 7, 10, 13,

Group C : 2, 5, 8, 11, 14,

a) What is the remainder on dividing a number in the group A by 3?

b) In which group 302 belongs?

- c) What number should be subtracted from a number in group c to get a multiple of 3?
- d) The difference of two numbers in any group is a multiple of a particular number . What is that number?
- e) In which group the sum of the two numbers in group B belongs?
- f) At least how many numbers of group B should be added so that the sum falls in the same group?

