DELHI PUBLIC SCHOOL NEWTOWN
SESSION 2022-23
MONDAY TEST

CLASS : IX **FULL MARKS: 40**
SUBJECT: MATHEMATICS **DATE: 12.12.22**

General Instructions:

- **The paper consists of three printed pages.**
- **All questions are compulsory.**
- **Copy the question number carefully before answering the questions.**

SECTION: A

1i) A girl walks 200m towards East and then she walks 150m towards North. [8x1 = 8]
The distance of the girl from the starting point is
a) 350m b) 250m c) 300m d) 225m

ii) A diagonal of a rectangle is inclined to one side of the rectangle at 25°. The acute angle between the diagonals is
a) 55° b) 50° c) 40° d) 65°

iii) The value of $2\cos^2 30° - 1$ is equal to

a) tan45° b)cos30° c) cos60° d) sin45°

iv) What is the value of tan1°tan2°tan3°……..tan89°

a) 1 b)-1 c) $\frac{1}{3}$ d) $\frac{3}{11}$

v) The point which lies on y axis at a distance of 5 units in the negative direction of y axis is

a) (0,5) b) (5,0) c) (0,-5) d) (-5,0) vi) The distance of the point P(-6,8) from origin is

a) 8 units b) $2\sqrt{7}$ units c) 10units d) 6 units

vii) ABC is an Isosceles triangle right angled at C, then which one is correct

a) $AB^2 = 2AC^2$ b) $AB^2 = 2\ AC$ c) $AC^2 = 2AB^2$ d) $AC^2 = 2AB$

viii) Which of the following is not true for a parallelogram

a) Opposite sides are equal
b) Opposite angles are equal

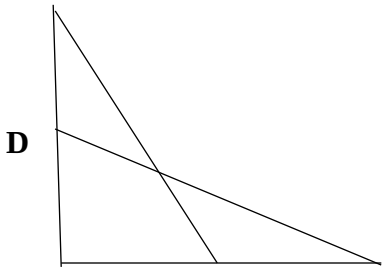
c) **Diagonals bisect each other**
d) **Opposite angles are bisected by the diagonals.**

SECTION: B

2. In the given figure, AE = DC = 13cm , BE = 5cm, angle ABC = 90°

and AD = EC = x cm. Calculate the length of AB and the value of x.

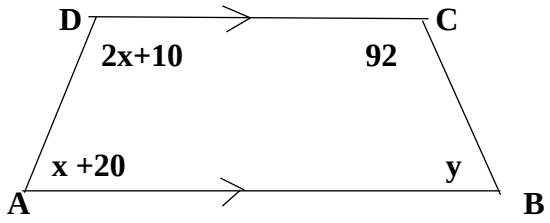
A **[3]**



B **E** **C**

3. In the given figure ABCD is a trapezium. AB is parallel to CD .Find the value of x and y.

[3]



4. Find the value of

$2\sqrt{2}\cos45°\cos60° + 2\sqrt{3}\sin30°\tan60° - \sin27°\sec63°$ **[3]**

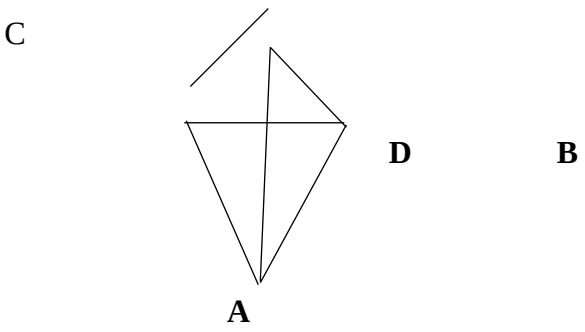
5. Find the relation between x and y such that the point (x,y) is equidistant from the points

(3,6) and (-3,4) **[3]**

6. The point A(0,3) , B(-2,a) and C(-1,4) are the vertices of a right angled triangle at A , find the value of a. **[4]**

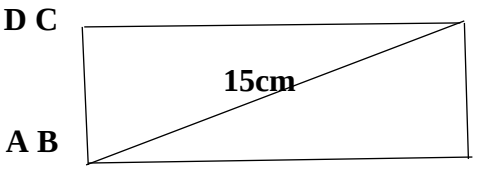
7. In the given figure , ABCD is a kite in which AB=AD and BC=CD. Prove that i) AC is a bisector of angle A and of angle C ii) AC is the perpendicular bisector of BD.

[4]



8. In the given figure , ABCD is a rectangle . Its diagonal AC = 15cm and angle ACD = x°. If cotx° = 3/2 , find the perimeter and area of the rectangle.

[4]



9. Prove that the sum of the squares of the sides of a rhombus is equal to the sum of squares of its diagonals. [4]

10. Show that the points (1,7) , (4,2), (-1,-1) and (-4,4) are the vertices of a square.

[4]