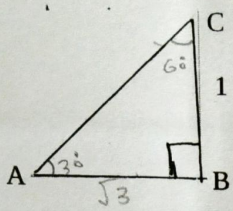
St. Joseph's G H S Changanacherry
SSLC Pre model Examination 2

Time : 1½ hrs **Total Score : 40**

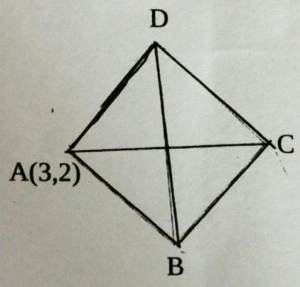
Mathematics

1. In the figure <B = 90°, BC = 1, tanA = 1/√3, what is the length of AB.



[1]

2. Write $x^2 - 9$ as the product of two first degree polynomials. [1]
3. If x- 1 is a factor of the polynomial $5x^3-4x^2-x-k$ what number is k? [2]
4. The scores of 7students in a class are given below.
   38, 43, 28, 42, 33, 46, 29. Find the mean and median. [2]
5. If sinA = 4/5, then find cosA and tanA. [2]
6. Find the coordinates of the point P which divides the line joining the points A(3,2) and B(8,7) in the ratio 2:3 [2]
7. In the figure, ABCD is a square. Its diagonals are parallel to the coordinate axes. AC = 6 and the coordinates of A is (3,2), write the coordinates of the vertices B, C and D.



[3]

8. a) The perimeter of a rectangle is 40 centimetres. Length of its smaller side is 7 centimetres. What is the length of its larger side?
   b) Find the sides of a rectangle with perimeter 40 centimetres and area 96 square centimetres [3]
9. Find the coordinates of the mid points of the sides of ΔABC, A(-3,2), B(1,5) and C(3,-4) [3]
10. Draw x and y axes. Mark the point (3,4).
    a) Draw a circle with centre as origin and passing through (3,4).
    b) Find its radius.
    c) Write two more points on this circle. [4]
11. A boy standing at the foot of a building, 40 m away from the foot of a tower sees the top of a tower at an angle of elevation of 60°. On climbing to the top of the building, he sees the top of the tower at an angle of elevation of 30°
    a) Draw a rough figure.
    b) What is the height of the tower?
    c) What is the height of the building? [4]
12. a) $p(x) = x^2 - 5x + 10$, What number is p(2).
    b) Write p(x) – p (2) as the product of two first degree polynomials. [4]

13. The following students are classified on the basis of marks obtained in an examination.

Marks	No. of students
0 - 10	4
10 - 20	7
20 - 30	10
30 - 40	12
40 - 50	8

a) If the students are arranged on the basis of marks (in the ascending order) what is assumed as the mark of the 12^{th} student?

b) Find the median mark. [4]

14. Consider the polynomial $p(x) = 3x^2 + 4x + 1$. Write $p(x)$ as the product of two first degree polynomials. [5]