St. Joseph Convent School, Deep nagar, Jalandhar
Subject :- Mathematics
Class :- 9th

Time: 90 minutes **Maximum Marks: 40 marks**

All Questions are compulsory

Q1. **a)** A sum is invested at compound interest compounded yearly. If the interest for two successive years be Rs. 5700 and Rs. 7410. Calculate rate of interest. (3)

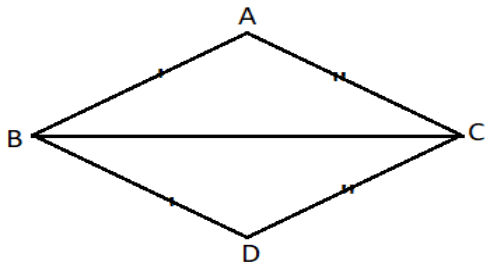
b) Find the value of a and b (3)

$\frac{2+\sqrt{3}}{2-\sqrt{3}} = a+b\sqrt{3}$

c) What point on the x-axis is equidistant from the point (7,6) and (-3,4) (4)

Q2. **a)** If a+2b+c = 0, then show that $a^3 + 8b^3 + c^3 = 6abc$ (3)

b) In the given figure AB=DB and AC=DC. If *L*ABD=58°, *L*DBC=(2x-4)°, *L*ACB=y+15° and *L*DCB=63°. Find the value of x and y. (3)



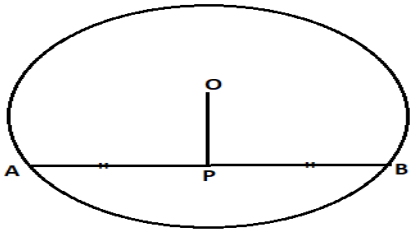
c) Evaluate (4)

$\left(\frac{16}{81}\right)^{\frac{-3}{4}} \times \left(\frac{49}{9}\right)^{\frac{3}{2}} \div \left(\frac{343}{216}\right)^{\frac{2}{3}}$

Q3. **a)** Factorise $(3x-2y)^2 + 3(3x-2y)-10$ (3)

b) Given $1176 = 2^p.3^q.7^r$. Find the numerical value of p,q,r (3)

c)The given fig. shows a circle with centre O. P is mid point of chord AB. Show that OP is perpendicular to AB (4)



Q4. **a)** Simplify (3)

$$7^0 \times (25)^{\frac{-3}{2}} - 5^{-3}$$

b) Expand (x+8) (x+10) (3)

c) Find compound interest on Rs. 12,000 in 3 years at 5% interest being compounded annually. (4)