

PRITHWI SECONDARY BOARDING SCHOOL

Basundhara, Kathmandu, Contact: 01-5904816

ANNUAL EXAMINATION - 2077

Grade: IX

Subject: Compulsory Mathematics

Time: 1 hour 30 minutes

Full Marks: 50

Pass Marks: 20

Group A: [2 X 1 = 2]

1.

- a) Write the formula to find profit percent when C. P., S. P. and profit are given.
- b) A square has its perimeter 24 cm; find the length of its side.

Group B: [6 X 2 = 12]

2.

- a) Find the area of a triangle whose base is 8 cm and height are 6 cm.
- b) What is the cost of carpeting a room 8m long, the breadth being 75% of its length, at the rate of Rs.39 per square meters?

3.

- a) How many bricks each of $25\text{cm} \times 10\text{cm}$ will required for paving a floor of a room $40\text{m} \times 30\text{m}$?
- b) The marked price of an article is Rs. 250 and 10% discount are allowed. How much is the discount amount?

4.

- a) Let $A = \{1,2,3,4,5\}$ and $B = \{4,5,6,7\}$, find $A \cup B$ and $A \cap B$.
- b) Find the number of subsets of the set $A = \{a, b, c\}$.

5.

- a) Factorize: $50ax^2 - 32ay^2$.
- b) Factorize: $x^2 + 5x + 6$.

6.

- a) Solve: $2^{x+1} - 2^x = 8$.
- b) Solve: $2x^2 - 3x + 1 = 0$.

7.

- a) The angles of a triangle are x° , $2x^\circ$ and $3x^\circ$. Find the angles of the triangle.
- b) One of the acute angles of a right-angled triangle is 30° . Find the other acute angle.

Group C: [9 X 4 = 36]

8. In a group of 450 students, 250 like oranges, 280 like apples and 40 dislike both the fruits.
 - a) Find the number of students who likes both the fruits.
 - b) Show the result in Venn diagram.
9. A room is 10 m long, 8m wide and 5 m high. Find the cost of colouring its walls and ceiling at Rs. 36 per square meters.
10. Solve: $4^x - 4^{x-1} = 192$.
11. Solve: $\frac{x+3}{2x-7} = \frac{2x-1}{x-3}$.
12. The sum of two numbers is 16 and their product is 63. Find the numbers.
13. Prove that the sum of angles of triangle is two right angles.
14. Inside a rectangular garden, 100m long and 80 m broad runs two crossing paths each of 5 m width, at right angle to each other, find the cost of planting at the remaining region at the rate of Rs. 1.60 per square meters.
15. When a bicycle is sold allowing 10% discount on its marked price, a seller gains 5% and allowing 5% discount, the profit is Rs.351. Find the cost price of the bicycle.
16. Write all the conditions of congruency of triangles with examples.

Best Wishes!!!