



Devi Balika Vidyalaya – Colombo 8
First Term Evaluation - 2016

Mathematics

Grade 10

Time-2 hours

- Answer all questions.

1. Simplify $2\frac{1}{3} - 1\frac{1}{6}$

2. Arrange in ascending order
0.025l, 402ml, 025l

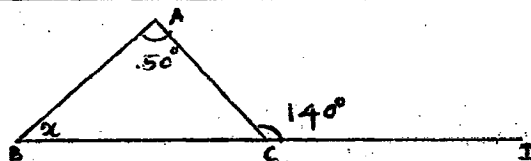
3. Write 105^2 of the form $(a+b)^2$ and find the value using the expansion of it.

4. Fill in the blanks.
 $(a+3)^2 = a^2 + \dots + \dots$

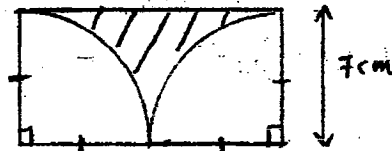
5. Find the value of $\sqrt{729}$

6. If $a+b=5$ and $ab=4$, find the value of a^2+b^2

7. Find the value of x



8. Find the perimeter of the shaded region



9. A book was sold for Rs 250 which was bought for Rs 200. Find the

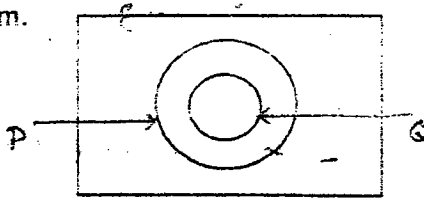
- Profit
- Percentage profit

- Write 5.2×10^{-3} in general form.
- Write 232.5 in scientific notation.

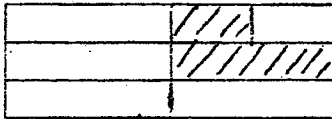
11. Write the general term of the given number sequence.

$$\frac{4}{1}, \frac{5}{2}, \frac{6}{3}, \frac{7}{4}$$

12. Shade $P \cap Q$ in the given Venn diagram.



13. Write the fraction of the shaded region out of the whole figure.



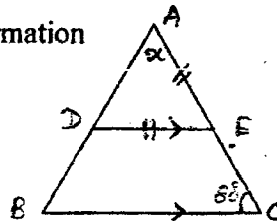
14. Write the inequality represented on the number line



15. Find the
 i) gradient
 ii) Intercept of the straight line, $3y - 4x = 6$

16. Factorize. $p^2 + 8p - 20$

17. Find the value of x according to the given information

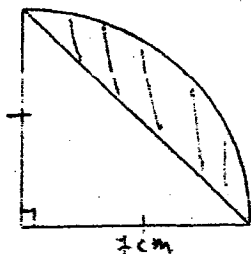


18. A certain amount of money was divided among Saman and Ruwan to the ratio 3:5. Ruwan got Rs 300 more than Saman. Find the total amount of money divided among them.

19. Make 'f' the subject of the formula

$$\frac{1}{v} + \frac{1}{u} = \frac{1}{f}$$

20. Find the area of the shaded region.



Part - 2

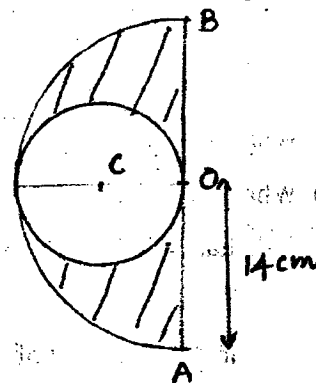
• Answer five questions.

1. A person gave $\frac{1}{4}$ of a land to his son and $\frac{1}{3}$ of the remainder to each of his two daughters. He donated 20% of the remaining land for charity and at last he owns 36 perches of the land.

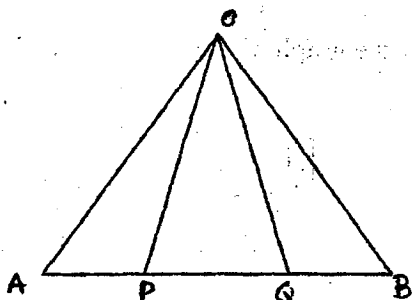
- i) What is the fraction out of the whole land given to one daughter ?
- ii) What is the fraction out of the whole land donated for charity ?
- iii) Find the size of the whole land.
- iv) How many perches of the land gave to his one daughter ?
- v) How many perches of the land donated for charity ?

2. A circular plate is removed from a semi-circular plate of radius 14cm as shown in the diagram.

- i) Find the area of the semi-circular plate.
- ii) Calculate the area of the remaining plate.
- iii) Find the perimeter of the shaded part



3.



The straight line AB is divided into three equal parts by the points P and Q as shown on the diagram. $OA=OB$ and $\hat{OAP} = \hat{OBQ}$.

- i) Copy the above diagram and mark the given data on it.
- ii) Prove that $\triangle AOP \cong \triangle BOQ$.
- iii) Write a relationship between OP and OQ.
- iv) Find the value of \hat{OPA} , if $\hat{POQ} = 54^\circ$.
- v) Find the value of \hat{OQB} .

4. i) Simplify and express the answer with positive indices.

$$\frac{a^3 \times b^{-4}}{b^3 \times a^{-3}}$$

ii) Factorize

(a) $(x-2)^2 - 9$

(b) $3x(2a-b) + 2y(b-2a)$

iii) Find the value of $\sqrt{44 \times 56 + 36}$ using the knowledge of factors.

iv) If $x = \frac{1}{3}$ and $y = 4$, find the value of $6x + 2y$

5. Given below is the weight of 30 students in grade 9 measured in a medical camp held in a school.

44 47 44 45 37 35 35 39 40 36
 41 41 40 33 43 41 32 49 45 41
 43 32 43 39 48 39 36 42 40 43

i) Complete the table using the given information.

| Weight of a Student(kg) | Tally marks | frequency (f) | Mid value of the class intervals (x) | fx |
|-------------------------|-------------|---------------|--------------------------------------|----|
| 30-34 | | | | |
| 34-38 | | | | |
| 38-42 | | | | |
| 42-46 | | | | |
| 46-50 | | | | |
| | | | | |

- ii) What is the modal class of the above frequency distribution?
- iii) What is the class interval including the median of the distribution?
- iv) Calculate the mean weight of a student.

6. An incomplete table of the values of x and y to draw the graph of the straight line $y = -3x + 4$ is given below.

| | | | | | |
|---|-------|---|---|-------|----|
| X | -1 | 0 | 1 | 2 | 3 |
| Y | | 4 | 1 | | -5 |

- i) Fill in the blanks of the above table.
- ii) Draw the graph using a suitable scale.
- iii) Write the co-ordinates of the point where the graph meets the x axis.
- iv) Write the equation of the straight line which is parallel to the above straight line and passing through the point (4,7)