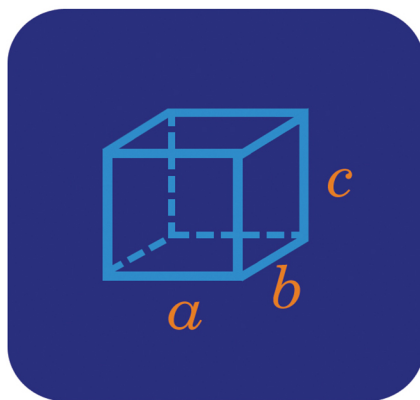



OSWAAL CBSE CCE Laboratory Manual Mathematics



Class 10 Term 1

Highlights

1. Strictly as per latest CBSE guidelines.
2. Includes all Activities / Experiments specified in latest CBSE Curriculum.
3. Practical Based Questions include – MCQs and Short Answer Types.
4. Extra Practice Questions given after each activity as 'Viva Voce'.
5. Group Activities & Projects to facilitate collective efforts and extension of learning to real life situations.
6. Brief description of each Activity / Experiment given as 'Theoretical Concepts'.

 **OSWAAL**
LABORATORY
MANUAL
in
MATHEMATICS
For Term 1

Class
10

Name

School

Class..... Section

Roll No.

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Activities

LIST OF EXPERIMENTS

SECOND TERM

Practicals should be conducted alongside the concepts taught in theory classes.

Experiment	Date	Page	Remarks
<ul style="list-style-type: none"> To obtain conditions for consistency or inconsistency for given pair of linear equations in two variables. <ul style="list-style-type: none"> (a) Pair 1 : $2x - y + 8 = 0$; $8x + 3y - 24 = 0$ Pair 2 : $x + 2y = 3$; $4x + 3y = 2$ (b) Pair 1 : $3x - y = 2$; $9x - 3y = 6$ Pair 2 : $2x + 3y = 9$; $4x + 6y = 18$ (c) Pair 1 : $x + 2y - 4 = 0$; $x + 2y - 6 = 0$ Pair 2 : $x + 4y = 10$; $3x + 6y = 12$ To verify the Basis Proportionality theorem using a parallel line board and triangle cut outs To verify Pythagoras theorem by paper cutting and pasting. To verify the ratio of areas of two similar triangles is equal to square of ratios of their corresponding sides. 			

Mathematics Laboratory Work :

Work done by students in the Maths lab is a part of Formative assessment. It is further divided into two parts :

- **Maths activities :** As prescribed in CBSE Mathematics laboratory Manual
- **Maths Project Work :** Some projects are suggested in the CBSE Mathematics laboratory Manual as well as in the present Manual. Apart from this teacher may select any Maths project in at least one Formative assessment duration

Sample Rubric for Recording Math lab activity work (15 Marks)

Lab Ethics (Parameters) (1 mark each)	Performance of Activity Scale 5 to 1	File Record (Parameters)
Brings material for activity	Able to explain concept correctly after completion (5) or Complete activity in the class independently (5)	Index/cover
Takes interest in class	Take help and complete the task (4)	Neatness
Regularly attends Math lab Class	Work independently but no able to complete (3)	Submits work on time
Takes care of property in Maths lab	Tries to perform hands on in the lab (2)	Regularly brings file
Listens attentively during demonstration	Just initiate the task allotted (1)	Does correction work (if any)

Sample Rubric for Recording Maths project work (10 Marks)

Parameter	Observation Points	Marks
Topic	Selection of Topic	1
Originality	Collection of data and information	2
Presentation	Creativity	2
Conclusion	Inference and Mathematics	2
Viva	Involved Explanation	3

PREFACE

CBSE always believe in Global Trends of Educational Transformation. The CBSE curriculum gets its lead from National Curriculum Framework – 2005 and Right to Free and Compulsory Education Act – 2009. As said by John Holt “We learn to do something by doing it. There is no other way” is very true and this is the reason why CBSE has Mathematics Practical's as a part of curriculum of class IX and X. So that students can perform what they learn how Mathematics has been applied in our daily life.

The Mathematics Lab Manual for Classes IX & X has been written so as to supplement the need of the students to prepare for lab work and learn mathematics practical during the entire year. Performing mathematics practically also generates interest in students towards mathematics.

This Lab Manual includes all activities and experiments as specified in latest CBSE curriculum. Practical based questions have been included in the form of Multiple Choice Questions (MCQs) and Short Answer Type Questions. At the end of every activity Viva Voce questions have been given for extra practice. Group Activities provide will help students to learn team work. Projects have been added to facilitate collective efforts and extension of learning to real life. Each activity/experiment comprises of theoretical concepts which provides brief description about activities.

This book is strictly according to the latest CBSE guidelines, and contains more than sufficient viva voce questions and brief description of each activity/experiment, which help students in practicing and completing the lab work. All activities and experiments are always checked twice and tried to make precise. Practically, this book provides students everything they need to learn during their lab work. Since we believe in continuous improvement, hence this book has been written with accuracy as well as updated as per CBSE guidelines and reviewed at different tiers by panel of experts.

We are sure that this book will serve as a perfect teaching guide for the teachers and good lab manual for the students. It is expected that they will take full advantage of our knowledge and experience.

At last we would like to thank our authors, editors, reviewers and specially students who regularly send us suggestions which helps in continuous improvement of this book and makes this book stand in the category of “One of the Best”. Wish you all Happy Learning.

–Publisher

Activity 1



EUCLID'S DIVISION LEMMA



OBJECTIVE

To find the HCF of two numbers experimentally based on Euclid's Division Lemma.

PRE-REQUISITE KNOWLEDGE

- ❖ Euclid's Division Lemma
- ❖ Concept of Real numbers
- ❖ Knowledge of HCF

MATERIAL REQUIRED

- ❖ Cardboard sheets
- ❖ Glazed papers of different colours
- ❖ A pair of scissors
- ❖ Geometry box
- ❖ Fevicol/Glue etc.

PROCEDURE

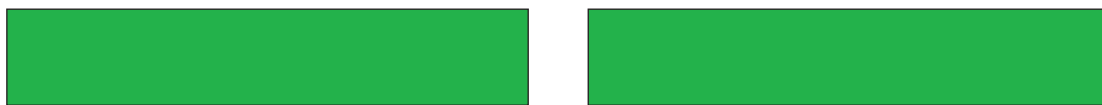
1. From the cardboard sheet of convenient size, cut out one strip of length a units, one strip of length b units ($b < a$), two strips each of length c units ($c < b$), one strip of length d units ($d < c$) and two strips each of length e units ($e < d$).
2. Paste all these strips using glazed papers of different colours as shown in Fig. 1.1 to Fig. 1.5.



← a units →
Fig. 1.1



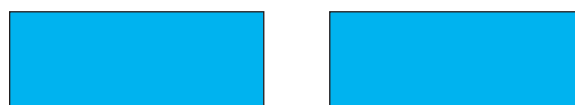
← b units →
Fig. 1.2



← c units → ← c units →
Fig. 1.3

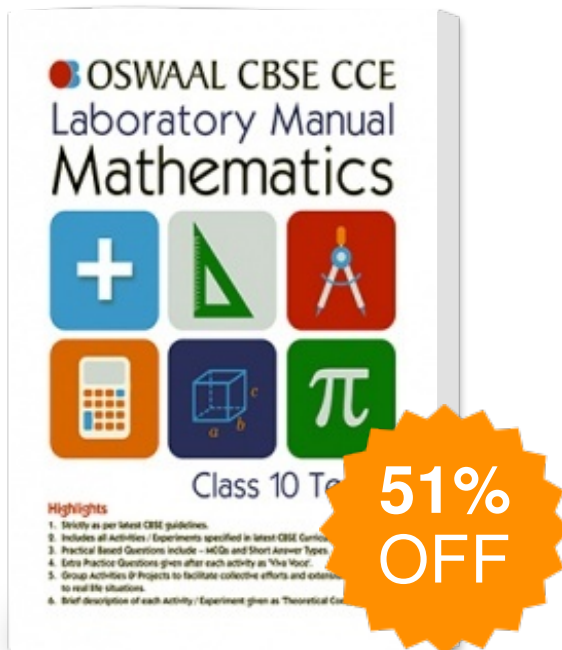


← d units →
Fig. 1.4



← e units → ← e units →
Fig. 1.5

Oswaal CBSE CCE Laboratory Manual For Class 10 Term-1 Mathematics



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