

The Calculator Slide Rule Instructions.

CONSTRUCTION

This slide rule has two parts : a main body and a sliding scale. The moveable magnifying cursor with a hairline assists one in setting figures accurately from one scale to another when making calculations of a complicated nature. The scales are graduated logarithmically and are not suitable for measuring lengths.

THE SCALES AND THEIR USES

Scales A & B are graduated from 1 to 100 and are used together with scales C & D for calculating squares and square roots.

Scales C & D are graduated from 1 to 10 and are the main working scales.

Scale CI is numbered in reverse from the other scales from 10 to 1. Extra care should be exercised when using this scale in order to read it correctly.

Scale K is graduated from 1 to 1000 and is used together with scales C & D for calculating cubes and cube roots.

In all calculations the decimal points must be ignored and the same location is used for a set of figures wherever the decimal point is located e.g. 0.0791, 0.791, 79.1

etc., all have the location 791. To place the decimal point a separate estimation by common sense or rough calculation is performed when the answer has been located.

CALCULATIONS

Multiplication and Division

Scales C, D and CI are used in multiplication and division. The actual computation can be made by one of two methods and the calculation answer appears on the stock scale D.

Ex. 1) $2 \times 4 = 8$

- Set the cursor line on the digit 2 of the D scale
- Move the CI scale and place the digit 4 under the cursor line.
- The answer 8 appears on the D scale where the index line at either end of the CI scale locates.

Ex. 2) $2 \times 4 = 8$

Set the index of C over 2 on D, move cursor to 4 on C and read 8 under cursor on D.

Ex. 3) $8 \div 2 = 4$

- Set the cursor line on the digit 8 of the D scale.
- Move the C scale and place the digit 2 under the cursor line.
- Then answer 4 appears on the D scale where the index line at either end of C scale locates.

Ex. 4) $31.5 \times 4.82 \div 19.2 = 7.91$

- Set the cursor line on the digit 31.5 of the D scale
- Move the CI scale and place the digit 4.82 under the cursor line remembering that this scale is graduated in reverse.
- Then move the cursor again and set the cursor line on the digit 19.2 of the CI scale.
- Answer 791 appears on the D scale just underneath the cursor line. Now a rough calculation must be performed to locate the decimal point.

$$30 \times 5 \div 20 = 7.5$$

$$\text{answer} = 7.91$$

Square and Square Roots.

The square of a number is obtained by setting the cursor line to the number on the D scale and reading the square on the A scale. The reverse procedure gives the square root. The number is set on the A scale and the square root is located on the D scale.

Cube and Cube Roots

The cube of a number is obtained by setting the cursor line to the number on the D scale and reading the cube on the K scale. The reverse procedure gives the cube root in the case of the square root.

Reciprocals

Scales D and CI are used and care should be taken when reading numbers on scale CI as it is numbered in reverse. For 1/2.7 set the scales together and locate the cursor line on the digit 2.7 on the D scale.

The answer appears on the CI scale as 0.371 and NOT 0.429.

Proportions

Proportions are computed by reference to scales C & D. This method can be applied to various calculations such as conversions, proportional allotment and percentage calculations.

Example:) There are 20 pencils to be allocated as

A : 45% B : 35% C : 20%

How many pencils will actually be shared to each?

- a) Set the index line of the C scale on the 20 of the D scale.
- b) Then locate each of the numbers 20, 35, 45 on the scale C and contrast them with the locations on the D scale giving 4, 7 and 9 respectively.
- c) In calculating the percentages, given each number of pencils, just perform the procedure vice-versa, then you will locate each number of pencils on the D scale and the C scale gives the percentages.

(4)

Inverse Proportions

For such calculations scales D and CI are used.

Example:) 6 men can do a job in 30 days.

- I) How many days would 4 men take to do it ?
Answer 45 days.
- II) How many men will be necessary to do it in 20 days ?
Answer 9 men.
 - a) Make 6 on the D scale correspond to 30 on the CI scale.
 - b) Read the number on the CI scale corresponding to 4 on the D scale which is the answer to question I.
 - c) At the same time corresponding to 20 on scale is the answer 9 to question II.

CLEANING

When it is necessary to clean the plastic a minimum of soap and water (not hot) should be used. Care should be taken to avoid any chemical solvents as the plastic may be defaced. Conditions of heat or damp should also be avoided.

(5)

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How to use

Globemaster
NO. 62200
plastic
Slide rule