The answer appears on the CI scale as 0·371 (and NOT 0·439)

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

Ex. 4) There are 39 pencils to be allotted to fifteen ...

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 digit 39 of the D scale.

b) Then locate each of the numbers 25, 45 etc on the scale C and connect them with the locations on the D scale giving 6, 7 and 9 respectively

c) In calculating the percentages, given each number of pencils, just draw down the corresponding lines, the sum will begin each number of pencils on the D scale and the C scale gives the percentages

Inverse Proportions

For such calculations scales D and CI are used

Ex. 5) 6 men can do a job in 20 days.
a) How many days would 4 men take to do it?
    Answer 45 days.
b) How many men will be necessary to do it in 20 days?
    Answer 9 men.
c) Make it on the D scale correspond to 20 on the CI scale.

b) Read the number on the CI scale corresponding to 4 on the D scale which is the answer (45) to question (a)
c) At the same time corresponding to 20 on the D scale is the answer (9) to question (b).

Sine and Cosine

Scales S (on the back of the slide scale) and D are used.

Ex. 6) Sin 40°=0.574.
Set the scales together and read the answer on the D scale.

Ex. 7) Cos 35°=Sin 55°=0.819.

Tangent

Scales T and D are used and set together.

Ex. 8) Tan 25°=0.466.

Logarithms

Scales L and D are used. Set the scales together and the cursor on 2.45 on the D scale.
The answer is then located on the L scale above it.

Ex. 9) Log. 2.45=0.384

CLEANING

When it is necessary to clean the plastic a minimum of soap and water (not kerosene) 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.

How to use

plastic
SANTOK
Slide rule

The Santok Slide Rule—Instructions.

CONSTRUCTION

The slide rules have two stocks and a sliding scale which can be moved over for logarithmic and trigono-metrical calculations. The moveable magnifying cursor with a hairline assists you in setting figures accurately from one scale to another when making calculations of a complicated nature. The scales are graduated loga-rithmically and are not suitable for measuring lengths Model B has two additional linear scales on its edges graduated in inches and centimetres.

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 situated 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.

Scale S is graduated in degrees to give sines and cosines

Scale T is graduated in degrees to give tangents.

Scale L is graduated from 1 to 10 to give logarithms.

These scales (S, T, L) are found on the reverse side of the slide scale.

In all calculations the decimal point must be ignored and the same location is used for a set of figures wher-ever the decimal point is located e.g. 0·0761, 0·761, 76·1 etc., all have the location 761. 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 use of two methods and the calculation answer appears on the stock scale D.

Ex. 1) 2 × 4 = 8
a) Set the cursor line on the digit 2 of the D scale.
b) Move the CI scale and place the digit 1 under the cursor line.
c) The answer (8) appears on the D scale where the index line at either end of the CI scale locates.

Ex. 2) 8 ÷ 2 = 4
a) Set the cursor line on the digit 8 of the D scale.
b) Move the C scale and place the digit 2 under the cursor line.
c) The answer (4) appears on the D scale where the index line at either end of C scale locates.

Ex. 3) 21·5 × 6·82 = 13·2 × 7·31

d) Set the cursor line on the digit 31·5 of the D scale.
b) Move the CI scale and place the digit 4·82 under the cursor line.
c) The answer the cursor again and set the cursor line is graduated in reverse

d) Then move the cursor again and set the cursor line on the digit 13·2 of the CI scale.
e) Answer 5·0 appears on the D scale just under-neath the cursor line. Now a rough calculation must be performed to locate the decimal point.
30×5 = 20×7·5
answer = 7·5.

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.

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 1/57 set the scales together and locate the cursor line on the digit 57 on the D scale.