Ex. (i) There are 40 pencils to be shared to each in following allotments. Actually how many pencils are to be shared to each.

A: 45%   B: 38%   C: 20%

a) Set the index-line of C on the digit 40 of D
b) Then locate each digit of 28, 35, 45 on C and contact them with logarithmic line of D which reads : 8, 14 and 18 respectively.
c) In case of finding percentages on of each number of pencils, just perform the procedure vice-versa, then you will find each number of pencils on D and use the logarithmic digit on C.

Inverse Proportion:

Inverse proportion is calculated by reference of scale method using scales D and CI.

Ex. (ii) 6 men can do a job in 30 days.

Question 1: How many days would it men take to do it in 20 days?
Answer: 45 days

Question 2: How many men will be necessary to do it in 20 days?
Answer: 9 men

a) Make 6 on D coincid to an CI
b) Read the number on CI in reference to it on D which is answer (45) to the question 1.
c) At the same time, in reference to 30 on D and that is answer (9) to the question 2.

Squares:

Numbers may be squared by multiplication direct, but results are more readily obtained by reading in A, the square of numbers directly appears in D

Square root:

The square roots of all numbers in A appear directly below in D.

Cubes:

Cubes of number in D can be obtained by projecting directly into K.

Cube Root:

Cubes roots are obtained by means of the reverse of cube process.

Sine and Cosine:

Scales S (reverse of the slide rule) and D are used.

Ex. (i) $\sin 30° = 0.574$
a) Set the hairline on the digit 35 of S.
b) Then the answer 0.574 appears on D

Ex. (?) $\cos 35° = \sin (90° - 35°) = 0.819$

Tangents:

Scales T (reverse of the slide scale) and D are used.

Ex. $\tan 25° = 0.466$
a) Set the hairline on the digit 25 of T.
b) Then the answer 0.466 appears on D.

Logarithms:

Scales L and D are used.

Ex. (i) Log... takes a value 2.45 of D
a) Set the index-line of L on the digit 2.45 of D
b) The answer appears on L where the index-line on D indicates.

How to use

plastic
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Slide rule

Construction:

The Slide Rule is constructed of two stocks and one slide scale. A wood cursor with a hairline spans the stocks and the slide scale.

The slide rule is described as a ruler having logarithmic graduations, as the graduations on the scales are not measures of length. The A scale and B are identically graduated from 1 to 100, and scales C and D from 1 to 10.

The relationship with graduations on each scale is as follows:

$$21.5 \times 0.82 \times 19.2 = 3.81$$
$$20 \times 5 \times 20 = 7.5$$

To explain once the above relationship:

(1) The graduations on the C scale and D are graduated equally.

(2) The graduations on CI are graduated conversely with the graduations of C and D.

(3) The graduations on A and B are graduated equally, and are equal to the graduations of C and D squared.

(4) The graduations on the scale K are equal to the graduations of C and D cubed.

The scales are in most cases not graduated in decimals, and practice in reading them may be necessary.

For example, in order to locate 1.38 or 0.286, first extract the decimal point (each as you need, to be converted later) and consider the number 138 or 286, then find 138 or 286 on the scale.

Set the cursor over the place that you have counted off. Your significant figures are 138 or 286, but these points on the scale can represent 138, 13.8, 0.138 (or need in) 28.6, 2.86, 0.286, in some cases.

of a number of four figures or more, such as 1309, the last digit (9) will be assumed by interpolation.

Calculation with use of slide rule is performed with significant figures as illustrated. The next problem is where to stick the decimal point in the resulting figures after the computation is made. For this problem, it is recommended that you use either common sense, or the so called "rough calculation contrast method".

For example, make the calculation of :

$$21.5 \times 0.82 \times 19.2 = 3.81$$
$$20 \times 5 \times 20 = 7.5$$

Now, in contrast to 7.5, the actual figures 791 obtained by operation of the slide rule, it will be readily understood to be 7.91 the correct answer.

Multiplication and Division:

Scales B, C or CI are used in multiplication and division. For the actual computation can be made by either of the two methods of operation, the slide operative or cursor operation, and always perform the calculations on answers appear on the stock.

Concrete procedures for calculations are as follows:

(a) Calculations to be multiplied or divided on the stock

(b) Calculation is first made by slide operation.

(c) Then, if necessary, calculation by cursor operation.

The following are exchangeable principles of locating the required answer.

(1) When calculation is made by slide operation, the answer will always be found on the stock, in line with the index of C scale.

(2) When calculation is carried out by cursor operation, the answer is always located on the stock under the hairline.

Ex. (1) 2.32×4

a) Set cursor hairline on the digit 2 of D

b) Move the CI scale and place the digit 4 under hairline

c) Then the answer (9) appears on D in line with either the left or right index of C

When the answer is off the scale (for example 32×5 =160), the index-line (left), the 10 must be used instead of the index-line (right, the 1 of C)

Ex. (2) 4÷2

a) Set cursor hairline on the digit 4 of D

b) Move the C scale and place the digit 2 under hairline

c) Then the answer (2) appears on D under the index-line (left, the 1 of C) location.

When the answer is off the scale (for example 32÷5 =6.4) the index-line (right, the 10 must be read instead of the index-line (left, the 1) of C)

Ex. (3) 2.32÷4

a) Set the hairline on the digit 3 of D

b) Move the CI scale and place the digit 6 under the hairline

c) Then move the cursor again and set the hairline on the digit 9 of D

d) Answer (5) appears on D just underneath of the hairline

Proportion:

Proportion is computed by reference of scale method using C and D. This method can be applied to various fields of calculations such as conversions, proportional allotment and percentage calculation.