Logarithms

Log. of a Vulgar Fract

Subt. the Log. of the Denom.
from the Log. of the numr.
the remainder is the Log. of
the Fraction —

N.B. The Index of the Log. of any
proper Fraction is negative
and its Complement to 9,
99 &c gives the number of
Cyphers prefixed to the Decimal
equivalent to the Vulgar
fraction

2 3 1

3456789. = 6.5386725

5067.123 = 3.7047615

.758 = −9.8796692

.034 = −8.5314789

.00079 = −6.8976271

$\frac{3}{4}$ = −9.8750613

$\frac{6}{7}$ = −9.9330533

$4\frac{1}{2}$ = 0.6532125

$\frac{1}{2}$ of $\frac{2}{3}$ | $\frac{2}{6}$ = −9.5228787

.00000000004 = −89.6020600

N.B. the number of Cyphers in the Decimal ~~part~~ Fract deducted from 9 or 99 gives the negative index to the Logarithm —

To find the Log: = nat: nr: of
seven places — Rule — Find the
Diff: of Log: by the two last
figures of the Nat: Nr: and divide
by 100 add the quotient to the Log:
first

4. 7234752
5. 3768947
3. 1475914
0. 8123047
6.4909 0. 4329134
.2709 6 — 9. 4329134
.0099614 — 7. 9983210
.0000000533774 — 1. 7274125
Ten Cyf: 21252 — 9. 3274152
3456729 = 6. 5356728

To find the Nat: number to
a given Log: to seven places
Rule Find the Diff: between the
given Log: and the next Log:
add two Cyphers and divide by
the Nr: in Col: Diff: The two
figures in the quotient added
to the first give the Nat: Nr:

7.2496324
8.72345567

Addition Logs.

When the Indices are both affirmative — the Index of the sum is affirmative —

When ~~both~~ one Negative

Rule — Add together the Log. and Subtract from the Index as many tens minus unity as there are Log. added, the remainder shews the No. of Cyphers that must be prefixed to the significant figures of the decimal corresponding to the Log

Example

9.847627
7.2749234
17.1225661

19
2 Cyphers

.75 X .0045 = .003375

.05 X .00094 =

.124 X .56 X .374 X .00097 =

.054 X .00056 X .37 X .00005 = .00000001392334

When one Index is aff: and the other negative

Rule. If after addition the Index is ten or more then ten subtract ten and the remainder is affirmative if less than ten negative

Exp

3.4674893
-9.2139374
450.2 = 2.6814267

6.4394372
-2.1963124
.043226. -5.6357496

346 X .096

395647 X .000469 =

Subtraction

Indices both affirmative

Both negative — Rule

If the upper Log.ˢ be greater than the lower, the index of the remainder will be affirmative; but if the lower be greater add 10 to the upper and the remainder will be negative

-9.2476427
-4.2749234
2.5727193 = 373.57

-7.2476427
-9.2749234
-7.5727193

When one index is affirmative and the other negative —

If the index of the upper Log.ˢ be affirmative add ten to it and the remainder will be affirmative —

If the index of the upper Log.ˢ be negative the remainder will be negative

Divide 32 by .0004

32 Log.ˢ = 11.3051500
- 6.6020600

10000 — 4.9030900

10200. Log.ˢ = 14.0334235
000009 — - 3.9542425

Arithmetical Compl.

The Arith.l Compl. of a Log
is its Compl. to cent 10

The addition of the A. C. in
any Operation answers to the
Subtraction of the Log.