Proofs of Repulsion.

1. A small sewing needle wiped with a woolen cloth, and placed gently on the surface of water, will swim & when viewed by a magnifying lens it will be found not to touch the water, but forms a hollow beneath the surface.

2. A small quantity of air tied in a bladder and put under the receiver of an air pump, will, when the receiver is exhausted, raise a great weight.

3. The condensed air from the magazine of an air-

– Gun impels a bullet with great velocity.–

4. The Electrical fly.

5 Bodies Electrised in the same way repel each other.

6. Similar poles of the magnet repel each other.

7. Light is reflected from a mirror

8. Hard ball rebounds from the ground

9. Light impinging on a polished body is reflected without touching the body.

– What proof is there that the air attracts an Electrised body?

– Is not air a non conductor how then can it attract any body.

– If the fly is moved round by the attraction of the air on the side opposite to the point, is not the attraction of the air, on the same side with the point, equal to the force.

– If the pith ball is attracted so strongly by the atmosphere how can any Electricity remain on the conductor?–

	14. 14	
	10 . 10	
	5 . 5	
	3 . 3	
9	8 . 8	43
	3 . 3	
	London	45

London.

Cont. Mr. Robb —

A bod: is said to be elect. when it attracts and offers contact: upon another body —

— Forms various — Fluidity change of temp.: — change of state in fusion — congelation — Evap.: condensation — Solution — precip. Crystall.n &c —

Fluids — Ice Snow — All the Not: Crystals become elect.: by the expansion occas: in them by heat — Tourmaline — Ice suddenly melted — Water suddenly frozen — Rosin wax and Sulphur when melted and becoming congealed become elect. — Chocolate When water is evaporated — Glauber Salt suddenly Crystl: all exhibit signs of Elect.n

In short in all the changes of bodies from fluidity to solidity

and vice versa, and from stands to various signs of Elect.: may be observed

Bodies capable of being Elect.: by means of excitement are divid. into two classes —

1 ~~Non~~ conductors

2 Non conductors

none of the first class exhibit any signs of Elect.: when rubbed on each other

The 2d class may be excited by friction on each other or on the first class and both become electrified —

1 Any body B brought near an electrif.: body A becomes electrified and the body and the body A then causing the elect.: in B. has its own elect.: induced similar to magnetism —

conducts — now have transmitted elect.: 4½ miles in an instant Electricity to a small distance and slowly —

Elect.: induced on conductors transitory — on Elect.: permanent strong resemblance to the effects of Magn.: on hard and soft steel

II. When A, that is Elect.: comes near B, not Elect.: it attracts — when in to contact repels — sparks — B becomes perm.: electrified and the electricity of A is diminished —

Imparted or communicated Elect.: —

A body rendered Elect.: by friction is always attracted by comm.: is always repelled

To exhibit elect.: appearances the body must be insulated

— Air when rarefied 20 times becomes a conductor
— Air becomes elect. by friction air gun — insulator but in frosty weather
Evapor.n and Discharge of fluids for any it should be small
ones are quickly increased by elect. as it augments the repulsion of ~~the~~ their parts
This repulsive power does not operate in a similar manner on the fluids of animals —
If the circulation of the blood is increased it depends on very different principles —
The action of the Elect. fluid is exerted at a distance like gravity
— Natural shock — accumulation diminished — Debilitated — increased Elect. phenomena —

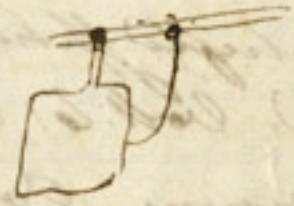
Electricity which lasts for months —
If the action of the El. F be $\frac{1}{D^2}$ it can be demonstrated that ~~the~~ all communicated Elect. will be retained on the external surface of the either a solid or hollow body — Newtons Princ.
If in proportion to the cubes the body would be elect. pos. on its surface and negatively
— The first is true — For a ball remains at rest in a hollow electrified sphere —
Ved. Coll. 61 Pl. 7
Glass and Resins — Pos. and Neg
no marks by which this can be ascertained with certainty
Most probably friction disposes all bodies to exist this Elect

Negative and pos: state in bodies —

— Electrophorus — points

pressure of the air less on points — attracting the point draws a current of air —

— Experiment to shew the Elect. cement glass plate covered with black sealing wax shew powder red sealing wax wit



— Exp.t of the tumbler —

The hair on a cord pressed by an electric shock is accounted by the generation of Elastic vapour

The passage of the Elec: Fluid produces or is accompan. with a great degree of heat — Fires spirits gun powder — melts silver leaf which is probably calcined — melts small wire and converts many substances into vapour

— The Electric Fl. reduces metals as well as calcines them

— The calces of Silver Zinc and Bismuth may be reduced by spreading them with water on a body and ~~letting~~ sending small sparks into them

Red Lead, Cinnabar &c reduced

— Some effects of Elect. similar to those produced by the semi lucid Bologna Stone, phosphor &c shine in the dark after being Elect. or exposed to the semi light

The Elect. spark either contains or produces fixed air — Nine perhaps the non either it reduces metals as fixed air contains the principle of inflam.ty

— The Elec. light through a Vacc. is darker the more perfect the Vac. In a Vacc. quite perfect it would probably not more

Thunder

Thunder depends on the contrary elect. of different strata of clouds

— nearest the earth generally neg: — two clouds reciprocally the equivalent effects on the earth

The thunder rod generally gives the opposite Elect. to the cloud — induced Elect. — Rain — Hail Vapors &c. strongly elect. and hence they reach as the Elect may be

Doctor Franklin's theory has been carried much further by Aepinus. He supposes the Elect. fluid to possess ~~[illegible]~~ properties Omit. to Magn: to be subject to laws of action precisely similar — "Its particles repel each other and attract some ingredient in all bodies whatever — Its action inversely as the Q.[2] Mass. seem to conform precisely to this ingenious hypothesis

1. In ordinary Elect.[y] there is no fluid imported, a change is only produced in the distribution of the Elect. fluid possessed by the body acted on this action must therefore be either to drive the fluid to the most distant extremity or attract it to its nearest

2. The ingredient in all bodies which attracts the Elec: fl. possesses

particles which repel each other and is not moveable in their Force, hence bodies which have an superabundancy of the Elec. Fl. repel each other.

3. A body superabundantly supplied with fluid attracts a body where there is a deficiency the Elec. Fl. attracting the engine in the body which is not saturated with it

4. Bodies deficient Elec. repel each other — particles of the fluid repel each other —

A piece of sealing wax will preserve its induced Elect.

— Sealing wax melted on a tube held between a positive and negative conductor but no sparks, the wax received a strong and permanent

positively ~~fixed~~ spots like a wet web on the face, resembling the veins —

— Present cause of thunder depends on induced Elec.

— How the Elect. of the Atmosphere is produced we cannot say

— Heat a great agent —

— Air simply heated becomes negatively electrified

In all the Phen.a of spontaneous evap.n and precipit.n it is probable that ~~Elec.~~ is produced

— Great mischief has been done by the chimney stake

— Amore B. Elec.t — summons height in air thunder than any we can make — colours white above and purple lowest —

Magnetic Needle varies daily
or annual and was before
it — predicted — Its effects on the
needle on my Rattling
— Many other Radicals similarly
affected — like the rain
— a fall of cold remarkably
but they do not affect any other
body brought near them which
should be affected for Elect.
— Air: B. conjectured to have
some conn.n with Magn.m
most conn.n in Northern Regions
Sun.n to the Opposing needle
— some connect. with the actual
of the sun —
— Aspect most in cold winter
and in Summer — because Wind
less frequent
— Constant Lambent light —
two shaded off." Elect. connected by a x

Earthquakes ascribed to Re-
action of Elect.y — Dr. Stukely —
— Explosion of vapours can
never communicate any simi-
lar sensation to parts of the earth
at a great distance from each
other

x Wind as air is a bad cond.r
there should will not have the Equi-
suddenly restored, but the Elect. being gra-
dually conducted from one to the other or
constant Lambent light with aspect

— Miscellaneous —

Speech depends on the sudden rarefaction and collapsing of the air

— Elect. It is dense in spheres in the inverse ∴ Diameter

— Tendency to cause increases as the body decreases — quiet from a point — Respiration air is apt lesser a sphere hence it will be more readily repelled — Flies stars &c —

— Elect. It precipitates lime for water —

21 Zenith
18 Ignace

Kirwan
Edin 1790 — Jun.

Page 10 — is at least in equilibrio
note a — Is it not as agreeable to the
Author's principles to suppose that
evaporation is produced in consequence
of the equilibrium between the repul-
sive force of the caloric contained in
the atmos and the resistance to
expansion ~~between~~ exerted by the
atmospheric pressure being removed

Page 26 — "a greater capacity for
containing water" a — This is
doubtful for if by capacity for
containing water be meant that in
herent quality of the atmos water
by its presence ~~[illegible]~~ increasing its elasticity
which not on day, is always the
same. Or if we consider its capa-
city indicating its disposition to
receive additional water this
must be greatest when perfectly
dry ~~&~~ and must diminish in
proportion as the water is received
into its interstices

Page 29 "They would return to the legal state of existence — a. — This Hypothetical ~~state~~ supposition would have its bounds from its own nature. The diminution of pressure produced by the decrease in the vol. and consequently gravity of the atmosphere would enable caloric to keep many bodies in the aeriform state at a much lower degree of temperature than is fit for that purpose, under the present pressure of our Atmosphere.

Page 47 — "A cubical foot of atmospheric air is capable of holding 12 grains of water in solution — a — The quantity of water held in solution by determinate quantities of the gases, must vary according to the degrees of temperature and pressure

Page 64 — 'so that ℔ 34.242 — a — This ℔ appears to be wrong for 3.5714 lbs of ~~Charcoal~~ Carbonic acid gas divided by 6.95, the ℔ of a cubical foot, gives 47.350 instead of 34.242.

— Page 73 — 'oxygenated muriatic acid' — as might be called oxygenized muriatic acid, or super-oxygenated — all acids are oxygenated.

— Page 81 — 'oxyd of Azote" — a. — Mr. Lavoisier has used the term oxyd of azote, but it is no where else adopted in the New Nomenclature, tho' in a former note, it is said to be more legitimate than the term Nitrous gas. This last he has retained both because it has been long employed and chiefly because, as a familiar term in Chemistry, it conveys no idea contradictory to the substance it is meant to express

Our

— 88 — "Nitrous lines lighter than common air" — a — One thirtieth of the weight of the heavier fluid would be the proper expression for verifying the comparative gravity of the lighter ~~fluid~~ body

— 89 — "Hydrogen expresses the base of vegetable acid" — a — perhaps Azote would be as probable to the base of Hydrogen, and what we formerly called inflam.t air, will hence in the new nomenclature Azote gas, and water will hence a real oxyd of Azote.

— 96 — "Element necessary to the composition of water" — a — A large quantity of Carbonic acid is disengaged during the combustion of Alcohol. This proceeds from the combination of Carbon contained in the alcohol along with Hydrogen in the alcohol with Oxygen during the combustion. This latter circumstance is explained at large in the after part of this work. —

— 100 "From want of data to calculate its quantity." a — From the general principles of the new chemical Phil.y Hydrogen Gas ought to contain a much greater quantity of Caloric for giving it the gaseous state, than Oxygen Gas, being 13 times lighter, it may be supposed to contain 13 times as much caloric. Yet reasonings drawn from the supposed quantity of Caloric in bodies by Lavoisier, and from many considerations, we must admit that we are hitherto very far from possessing any accurate knowledge of that part of them in which Caloric is concerned.

Pag
102 "Calorie from each pound
of Hydrogen Gas 295.589 50
a — be you no other hold upon
what principle Mr Lavoisier
proceeds for ascertaining the quantity of
Calorie disengaged during the com-
bustion of each pound of Hydrogen
Gas. If we suppose it 13 times
as much as that of Water the above
number should be 628.1164 —
104 "2 Gros 1 1/5 Gr of Charcoal"
a — Hence we collect that the perfo
rmed by the Author, were 1 lb or
9216 Grains of Nitre to 145.92 Gr
of charcoal. —
112 — "Charcoal in its compo:
a — and as in the case of oil
to their different degrees of oxygen
for to this the difference between the
various kinds may be partly owing
123. "From its combination with
the other elements" a — This is only
partially true, for a small part of the
ingredients remains obstinately fixed

To find two numbers that the first with ½ sect. shall be 20 and the 2d with ½ the first = 20

$$x + \frac{y}{2} = 20$$
$$y + \frac{x}{2} = 20$$

$$2x + y = 40$$
$$x + 3y = 60$$

$$2x + 6y = 120$$
$$2x + y = 60$$

1st eq from 2d

$$5y = 60$$
$$y = 16$$ second

$$2x + 16 = 40$$
$$x = 12$$ first

One exchanges 6 crowns & 2 Dollars for 45 Shill. and at another time 9 Cr. and 5 Dollars for 76 Shill. req. the val. of the Cr. and Dol.

x = Shil. Cr.
y = do Doll.

$6x + 2y = 45$
$9x + 5y = 76$

$18x + 6y = 152$ } 2 on the 1st, 3 on the 2nd
$18x + 6y = 135$
$4y = 17$
$y = 4\frac{1}{4}$ Shill. Doll.

$6x + 8\frac{1}{2} = 45$
$x = 6\frac{1}{2}$ Crown.

1

3 Book of Euclids Elements

Definitions —

1 If one quantity divides another without a remainder, the lesser quantity is called a part, and the greater a multiple of the first part.

Ex: 4 is a part of 12 and 12 a multiple of 4 —

— Equimultiples —

12 : 4
3 3
36 & 12 are equimultiples of 12 & 4 —

3 When two quantities are compared with each other it may be enquired, either how much the one exceeds the other;

or how often the one is contained in the other. The first is called Arithmetical, the second Geometrical comparison.

— The first quantity is called the Antecedent, the 2 the Consequent. The Ratio of any Antecedent to its consequent is the quotient arising from the Division of the Antecedent by the Consequent

Examples

	Ant.	Con.		Ratios
The Ratio of	12	4	is	3
of	6	3	=	2
of	2	4	=	$\frac{1}{2}$
of	11	3	=	$3\frac{2}{3}$
of	3	12	=	$\frac{3}{12}$
of	17	6	=	$2\frac{5}{6}$
of	6	21	=	$\frac{6}{21}$

Def. 4 — Magnitudes only of the same kind can have proportion to each other. Thus a line can have a Ratio to a line, an inch to a yard a rupee to a Gold Mohur &c; but a line can have not ratio to a rupee, nor a Surface to a Solid or the heat of a body to its weight &c —

5. If the first of four quantities contains or is contained by the second, as the same number of times that the third contains or is contained by the fourth, then the first is said to have to the 2 the same Ratio which the third has to the fourth — Compl.

4 Examples 1

12 : 4 :: 6 : 2 — Ratio — 3

and 4 : 12 :: 2 : 6 — $\frac{1}{3}$ —

Def 7 — 12 : 4 :: 6 : 3 here has to 4 a greater ratio than 6 to 3

Def 9 — Exp: 2 : 4 : 8 and as 2 is to 4 so is 4 to 8 —

Def 10 — If three magnitudes be proportionals the ratio of the first to the third is equal to the ratio of the square of the first to the square of the second — This is called Duplicate Ratio —

If a Log. sine be deducted from the Radius (10.) the remainder is called the Arithmetical Complement (C. A. S.) —

— Let: and Dr given to find the Mundane Alt

Add the D. and Co Let: if the alike; but subtract when unlike — results = Mundane Altitude —

— To take out seconds in Log. sine — multiply the Centesimal difference by the seconds, and cut off two figures

— To find the seconds to a Log. add two cipher to the Common difference and divide by the cent. Difference

To find the proportion of
Coffee: in a mixture

Question

W: lost by it — m

W: lost by $= q$ th: part — w

O light part — $h = x$

$l = y$

suppose the $\frac{x}{h}$ of the q th

$q' m : h :: x = \frac{hx}{m}$

$q m : l : y = \frac{ly}{m}$

$\frac{xh}{m} + \frac{yl}{m} = w = \frac{xh + yl}{m}$

$w = \frac{mh - yh + yl}{m}$

$wm = mh - yh + yl$

$yl - yh = wm - hm$

$y = \frac{wm - hm}{l - h}$

Archimedes discovered
this — but this proceeds upon
supposing that the matter

8th Appt –

when any sound is produced
there occurs 2 vibrations of $\frac{1}{5}$
and one $\frac{1}{3}$ the length of the funda-
mental vibration –

8th is $= \frac{1}{3}$
5th $= \frac{1}{5}$ } fundamental note.

To find two such numbers

– Two tradesmen A and B are
employed about a piece of work
which A could finish in
15 hours & in 10 in what
time will they do it by
working together? – 6 hours Ans.

Req.d two numbers whose
difference is eight and three
times the greater is equal to
five times the lesser. – 12: 20

– There are three meadows con-
tiguous to each other, that in
the middle contains 25 acres
if this be joined to that on the
east it will make it three
times as large as that on the
west, but if joined to the west
meadow it will be only twice
as large as that on the east
– req.d the contents of each? – 20, 15. –

Req: two numbers whose difference is three and the diff: of their squares 91 / 15.13

Req: two numbers whose product is 96 and whose sum is equal to five times their diff: 5 : 12 /

To find two such numbers that $\frac{1}{2}$ first with $\frac{1}{3}$ 2d = 32 and $\frac{1}{4}$ 1st + $\frac{1}{5}$ 2d = 18

$$\frac{x}{2} + \frac{y}{3} = 32 \text{ and } \frac{x}{4} + \frac{y}{5} = 18$$

$$3x + 2y = 192$$
$$5x + 4y = 360$$

$$15x + 10y = 1050 \quad 3^{\text{d}}\ 2^{\text{d}}\ \text{Eq}^{\text{n}}$$
$$15x + 12y = 960 \quad -5 \text{ times } 1^{\text{st}}$$
$$2y = 120$$
$$y = 60 \text{ Sum}$$

$$3x + 2y \text{ or } 3x + 12 = 192$$
$$x = 24 \text{ first}$$

$x = 1 = \cdot 7 = -$

A person paid 80 £ in half Guineas and Crowns using 101 pieces in all, how many of each sort did he pay

$x = \frac{1}{2}$ £s
$y =$ Crowns

$x + y = 101$

$21x + 10y = 2000$ Shillings

$5x \times 10 = 10x + 10y = 1010$

$11x = 2000 - 1010 = 990$

$x = 90$
$y = 11$

A man and his wife usually drank a vessel of beer in 12 days. The woman could drink it in 30 days, how long would it last the man

$x =$ days man

$x : 1 :: 12 : \frac{12}{x} =$ part done by man

$30 : 1 :: 12 : \frac{12}{30} =$ Wife by wife

$\frac{12}{x} + \frac{12}{30} = 1$
$x = 20$

What two numbers are as 3 : 2, and their sum equal to the square of their difference

$x \pm$ one of the numbers

$3 : 2 :: x : \frac{2x}{3} =$ the other

$x + \frac{2x}{3} = \frac{3x + 2x}{3} = \frac{5x}{3} =$ sum

$\frac{x}{3} =$ difference

$\frac{5x}{3} = \frac{x}{3} \times \frac{x}{3}$

$5 = \frac{x}{3}$

$x = 15$
$\frac{2x}{3} = 10$

What two numbers are as 2 : 3 to each of which if 4 be added the sums will be as 5 to 7

$x =$ one of the numbers

$2 : 3 :: x : \frac{3x}{2}$ other

$x + 4 : \frac{3x}{2} + 4 :: 5 : 7$

$7x + 28 = \frac{15x}{2} + 20$

$7x + 8 = \frac{15x}{2}$

$x = 16$
$\frac{3x}{2} = 24$

$2 : 3 :: x : y$

$3x = 2y$

$x+4 : y+4 :: 5 : 7$

$7x + 28 = 5y + 20$

$x = \frac{2y}{3}$

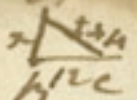
$x = \frac{5y-8}{7}$

$\frac{2y}{3} = \frac{5y-8}{7}$

$14y = 15y - 24$

$y = 24$

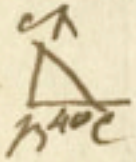
$x = 16$



Given $BC = 12$, $AC - AB = 4$ } Ans.

$x^2 + 144 = x^2 + 8x + 16$

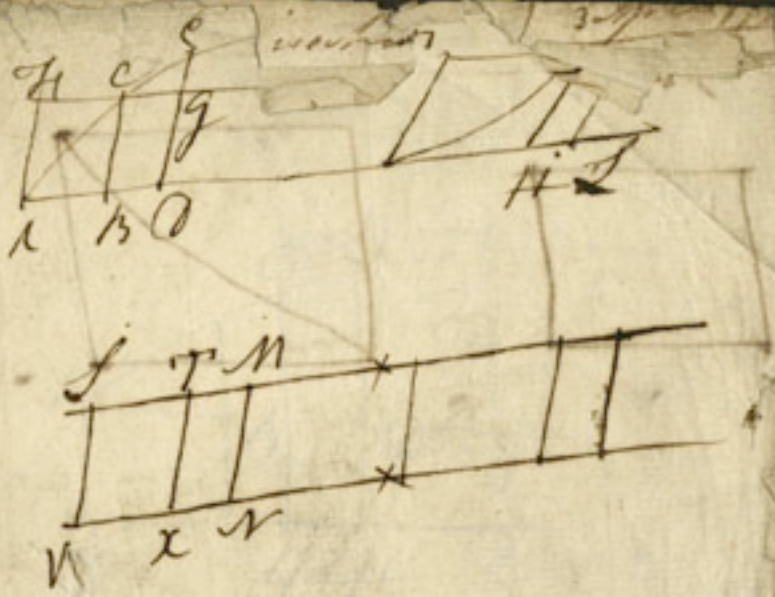
$x = 16$



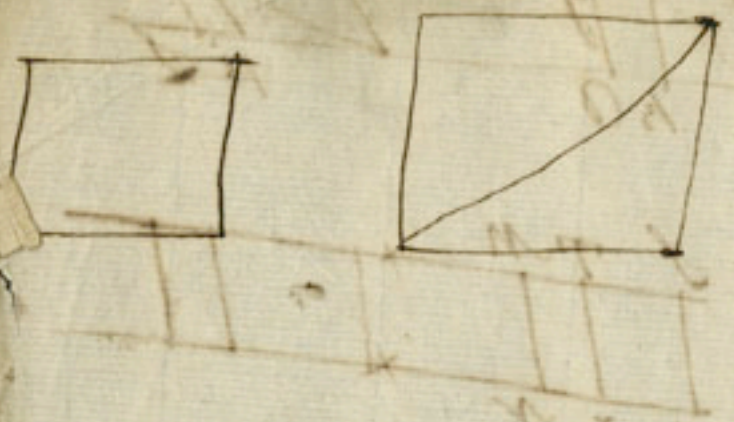
Given $BC = 40$, $AC + AB = 50$ } Required sides

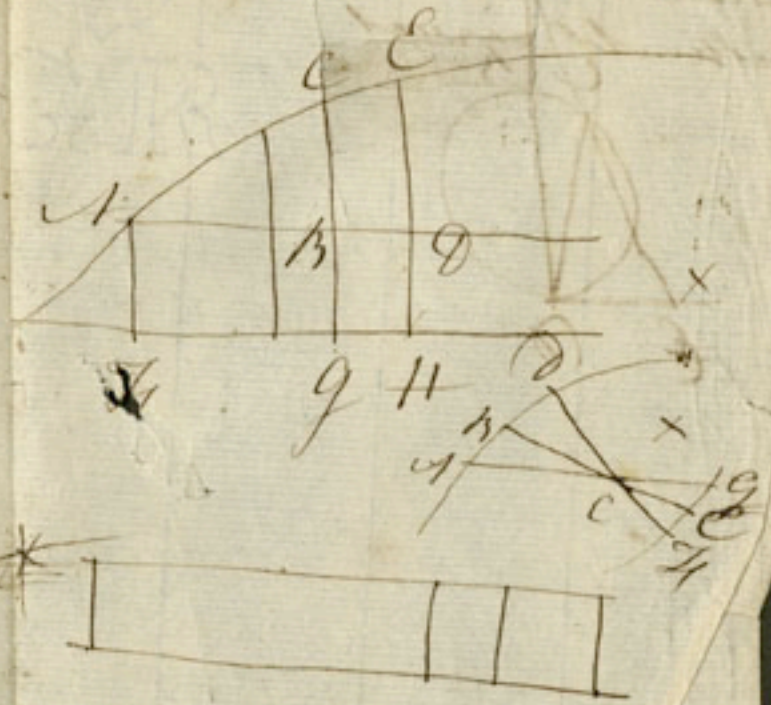
~~Have in a footer~~

49 Reponti



p. 4. In cuneiform the order
similarly method to the
the S. of the areas is more
plain when the S. of S. of
are equal, are :: to the order

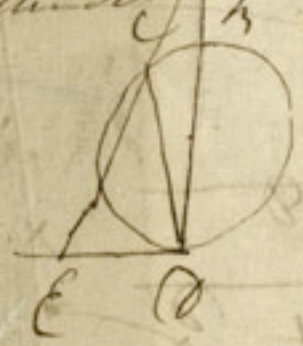




72 73

36 37

Q.E.D. If Q. when can near to [illegible] [illegible] are equal



1 [illegible]

11 $T = \sqrt{\frac{1}{F}}$

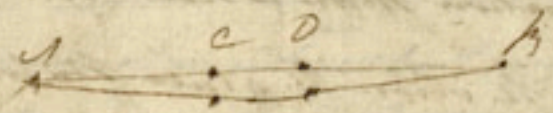
3 $T = \sqrt{W}$

4 $T = L$

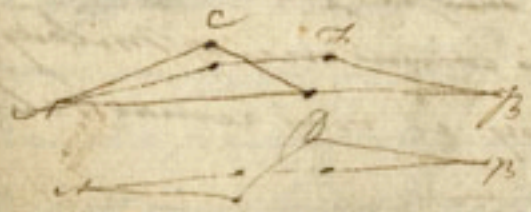
5 $p \cdot L = O^2 W : C^2 F$

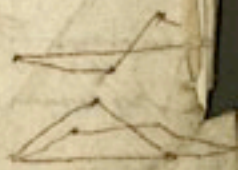
$p = \frac{O^2}{C^2} \times \frac{WL}{F}$

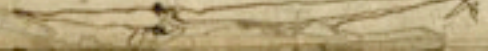
to $\frac{1}{2}$ Log of $\frac{F}{WL}$ add 1.2933962



[illegible]







when the chord is divided into an
odd number of parts give stronger an-
vibration than when even.

the reason of this seems the tone
— We can easily see why the vibrating
wire wound with brass wire
in speaking any person has a par-
ticular tone — so in music each —
half tone in music flows in
harmony. This coincidence of melody
and harmony is very remarkable

All notes however may differ
other things ~~except~~ in the natural
scale. There seems to be something
in our nature which disposes us
to this method of considering the note
on the flat scale.

— Women voice an octave above
a man's. Musicians by note alone
can sufficiently tell this have some
time mistaken the two notes at the
interval of an octave, but one note.
— When one string performs twice
the number of vibrations in the same time
does the two well sound octaves to
each other. As in speaking men have
a particular tone of voice to which the
different elevations and depressions
seem may be referred, so in music
there is a particular note on which
the rest are built, called the fun-
damental key note, this the lo

the first or first in the octave
compose above is also called the
key note, as differing little from
the other. —

4 April — 1776

C	D	E	F	G	A	B
k	II	III	IV	V	VI	VII, 0
vibrations in a minute	120,	135	150,	160,	180,	200, 225, 240
T	t	H	T	t	T	H
8/9	9/10	15/16	8/9	9/10	8/9	15/16

1 k — V — 0
2 k — V — 0
3 k — III — V — 0
4 k — 3 — V — 0
5 k — IV — VI — 0
6 k —

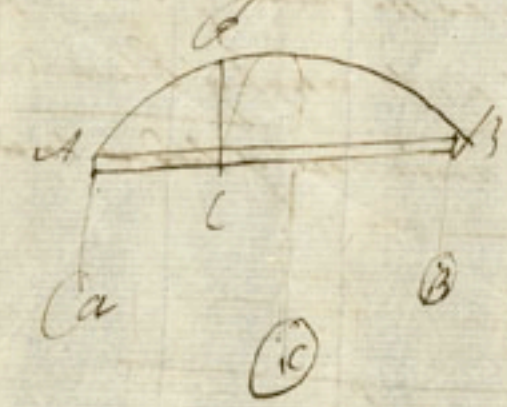
The Key and 3, 4, 5 6 & 8 produce a sign. The mean are called concords.
The Key and 2, 7 and the 7 & 8 produce discords.
It is very difficult to assign the cause of the pleasure arising from a piece of music — The concords are agreeable to the ear of all nations. — All nations may by the ear make but have very different ideas of it.
By the great Ones the proportions of the length be produce agreeable harmony — ∴ from 2, 3, 4 arise the music — Low numbers give the most perfect harmony — The ancients, not depending on the knowledge of the proportions — most part of mankind are ignorant of them — some ascribe the pleasure to the concordance of the vibrations — But that this is not the case is evident by taking an octave not a very flat

[illegible] below the 8th vibration will
[illegible] continued for a long time, yet we can
[illegible]dy perceive any difference from the
[illegible]ave in pitch in pitch — Different
[illegible] in proportion to the same string, any
[illegible] fundamental sound always with
[illegible] practical vibration of the whole
[illegible]ly a minimum should be taken
[illegible]ient pitch — Frigate bodies also
[illegible] equable sounds — Note on the accom-
[illegible]ment with the Reed 17 — Experimentally
[illegible] — attempt that — gun will
[illegible] stand proof — Mounting Dance-
[illegible] should be avoided in bells — Great
[illegible] in the depth of Dol and its effect
[illegible] of the fundamental sound — Experiment
[illegible] in the Church — Shape of the string —
[illegible] in the angle head of mother string
[illegible] unison or octave, third &c
[illegible] notes in whistling — coincidence
[illegible] is wholly — measurement
[illegible] may that the pulses of air have *

for any simple note — this an contain
two other sounds — or other harmonics
3 times as fast the other 5 times as quick
∴ k : V as 2 : 3.

* to ~~from~~ vibrate in the same time

Saturday — 6 March 1976



a × AC + B × BC
a BC × AC + BC × AC

Then is expressed by the equation

of CE — Then is expressed by another equation

with the preceding equation

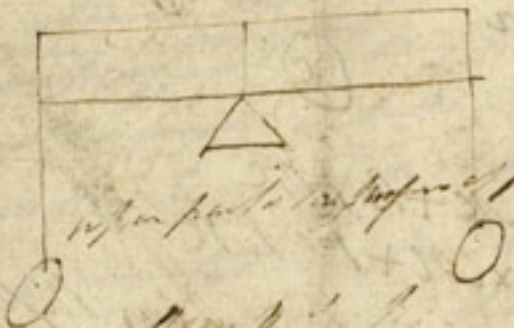
by Mr Ramsey

Plan

Co-sine & Elevation
length
Roof make than
a roof of a tower pitch

The chain is as the sum of the length
and intervals as the angle of Elevation

of the resistance of bodies to move
together ——



upon parts in proportion of friction

[illegible]

[illegible] line of [illegible] cut the centre of gravity
is about $\frac{1}{5}$ from the bottom in a cylinder

History of Medicine into
Periods —
1. From the creation to the
deluge — There nothing but
from the bible —
2. From the Deluge to the
Argonautic expedition —
— Egyptian — Esculapius the
Scholar of Chiron — The
bird first suggested the
idea of a Glyster by thrusting
its bill into its anus
— Bleeding by the Thessalo-
nian cutting his vein against
a pointed rock, and after the
wounded rolling himself in
the mud to stop it

3. From the Argonautic expedition to the time of Hyppocrates — Chiron one of Homers heroes half man half horse practised in his cave, patients came to his curious Physick — Jews had little knowledge of Physick — never attempted to cure the Leprosy — Eastern nations exposed the sick on the high ways, to have the advice of passengers — Melampus first discovered a Potherbs from his goats eating black Hellebore or Nimbers.

The Greek Esculapius first

vented patients in Phen — he is said to have brought the dead to life — Pluto complained to Jupiter that if this man was permitted to go on the infernal regions would soon want inhabitants — Jupiter killed him and whom he had raised from the dead with a thunder bolt

— Esculapius had two sons who were surgeons to Agamemnon at the siege of Troy — one of them restored to health Philoctetes wounded by bleeding in both the arms —

Pythagoras — Hyppocrates the first regular Physian heroes of the school

This great man first united
anatomy, chemistry &c into
one — The great age of
the Antediluvians gave them
great opportunities of studying
the nature and cure of diseases
— Adam the first Anatomist —

— Chemistry

— Different definitions of
Chemistry — Boerhaave the
first who distinguished Chemistry
from Natural Philosophy —
— Chemistry has been defined
that science which treats of
the decomposition of bodies — but
here the instrument is taken
for the object — Chemistry the
particular ~~properties~~, and
N. Phil: the general properties
of matter — Attraction — Affinity
— Bendes Nat: Phil: and Chemistry
there is the science of ani-
mation distinct from the eith-
ers — Doctor Lower, Doctor
Cullen — Attraction, Affinity
Irritability —

The science of animated nature expects many phenomena in the animal & vegetable kingdoms —
E. G. The Gastric juices of the stomach dissolves a dead but not a living stomach — There is something in the living body that resists the action of the liquor on the stomach — The blood of an animal while alive is thin when the animal dies it coagulates, and this altho' the same degree of heat is kept up. Mr. Hunter says the blood has a living principle, but in the body the principles of animation are formed in the solids, here suppose the blood effects contain this principle it will equally account for the phenomena — The Barberry flower when the leaves are pricked in the inside they gather round the stamina &c — A muscle taken out of the body and irritated shrinks more than it ought from the mere mechanical impulse of the point — All these effects owing to vitality — Porter Blacks Lectures of Chemistry is the science that treats of the effects of heat on matter, this imperfect — Chemistry is both an art

Prime