Maths for Time-Travellers

Briefing 17

Adam Atkinson (ghira@mistral.co.uk)
MathsJam Time Travel Division
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When will I use this?

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Between about 1590 and 1614

Safety First!

Don’t destroy the universe!

Don’t change history!

Prosthaphaeresis

$$\cos(a)\cos(b)=\frac{\cos(a-b)+\cos(a+b)}{2}$$

and several others but we'll just use this one

Phenolphthalein

Let’s multiply 2000 by 400

Presbyopia

Let’s multiply 2000 by 400

Divide by 10000 and 1000 respectively.

Obtain 0.2 and 0.4

Palimpsest

Let’s multiply 2000 by 400

Divide by 10000 and 1000 respectively.

Obtain 0.2 and 0.4

Look up arccos(0.2) and arccos(0.4)

Prostaglandin

Let’s multiply 2000 by 400!

Divide by 10000 and 1000 respectively.

Obtain 0.2 and 0.4

Look up arccos(0.2) and arccos(0.4)

NB: radians not invented yet

Paternoster

Look up arccos(0.2) and arccos(0.4)

78° 28’ and 66° 25’ respectively

$a-b$ and $a+b$

are thus 12° 3’ and 144° 53’

Psittacosis

Look up cosines of 12˚3’ and 144˚ 53’

0.9779 and -0.8179

Add these and divide by 2: 0.08

Panopticon

Have 0.08

Multiply by 10 million to restore powers of 10 removed at start:

800,000

Parallelogram

Let’s divide 300 by 3.

Divide 300 by 1000 to get 0.3

arccos(0.3) is about 72° 32’ 30”

Leave 3 alone. We need an angle whose cosine is 1/3, so that will be arcsec(3).

That is about 70° 31’ 45”

Polypeptide

Difference and sum are

2˚ 0’ 45’’ and 143˚ 4’ 15’’

cosines of those are 0.9994 and -0.7994

sum is 0.2

divide by 2, 0.1

multiply by 1000, get 100. Yay!