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WEDNESDAY

JULY

28th Week • 190-175

JULY 2025				
M	T	W	T	F
	1	2	3	4
7	8	9	10	11
14	15	16	17	18
21	22	23	24	25
28	29	30	31	

Mathematicians (starting in antiquity, formalized much later) wanted multiplication to share with addition these structural laws:

1. Closure: the product of two integers is an integer.

2. Commutativity: $ab = ba$

3. Associativity: $(ab)c = a(bc)$

4. Identity: $a \cdot 1 = a$

5. Distributivity: $a(b+c) = ab+ac$

Once you want all of these together, then $(-1) \times (-1) = +1$ is forced.

3. But doesn't this feel artificial?

Yes! That's the exact philosophical unease.

A person who never made a mistake never tried anything new. - Albert Einstein