GF-01 Worked Examples

Graph: N=6; SC=32; k=1 (ring), k=2 (chords); cap=∞; u(0)=[3,1,0,0,0,0]

Edges (ID order): 1:1-2(k=1), 2:1-4(k=2), 3:1-6(k=1), 4:2-3(k=1), 5:2-5(k=2), 6:3-4(k=1), 7:4-5(k=1), 8:5-6(k=1)

Primes for s_t: [2, 3, 5, 7, 11, 13]

Loom constants: M=1000000007, C_0=1234567, rule: C_t=(17*C_(t-1)+23*s_t+seq) mod M

A2 — UMX Tick Ledger (Filled)

tick	Σ pre_u	Σ post_u	Σ_check (must match)
1	4	4	OK

Tick 1

pre_u[1..6]: 3, 1, 0, 0, 0, 0

Edges (ID order) with du, raw, f_e:

e_id	1	2	du	raw=floor(k*|du|/SC)	cap	f_e
2	1	4	3	0	∞	0
3	1	6	3	0	∞	0
4	2	3	1	0	∞	0
5	2	5	1	0	∞	0
6	3	4	0	0	∞	0
7	4	5	0	0	∞	0
8	5	6	0	0	∞	0

post_u[1..6]: 3, 1, 0, 0, 0, 0

A3 — Loom P-Block (Filled)

Tick 1

tick	seq	s_t	C_t
1	1	9	20987847

Edge flux summary (f_e):

e_{id}	f_e
2	0
3	0
4	0
5	0
6	0
7	0
8	0

$C_1 = (17*1234567 + 23*9 + 1) \bmod 1000000007 = 20987847$

A1 — NAP Envelope (Filled Example)

Tick 1 (paper)

v	tick
1	1
gid	nid
GF01	N/A
layer	mode
DATA	P
payload_ref	seq
GF01_APX_v0 (manifest_check TBD after Press)	1
prev_chain	sig
1234567	(witness at I-block)

Note: payload_ref will equal the APX manifest_check once Press (A5–A8) is tallied for this window.

A2 — UMX Tick Ledger (Filled)

tick	Σ pre_u	Σ post_u	Σ_check (must match)
2	4	4	OK

Tick 2

pre_u[1..6]: 3, 1, 0, 0, 0, 0

Edges (ID order) with du, raw, f_e:

e_id	u	v	du	raw=floor(k*|du|/SC)	cap	f_e
1	1	2	2	0	∞	0
2	1	4	3	0	∞	0
3	1	6	3	0	∞	0
4	2	3	1	0	∞	0
5	2	5	1	0	∞	0
6	3	4	0	0	∞	0
7	4	5	0	0	∞	0
8	5	6	0	0	∞	0

post_u[1..6]: 3, 1, 0, 0, 0, 0

A3 — Loom P-Block (Filled)

Tick 2

tick	seq	s_t	C_t
2	2	9	356793608

Edge flux summary (f_e):

e_id	f_e
2	0
3	0
4	0
5	0
6	0
7	0
8	0

$C_2 = (17*20987847 + 23*9 + 2) \bmod 1000000007 = 356793608$

A1 — NAP Envelope (Filled Example)

Tick 2 (paper)

v	tick
1	2
gid	**nid**
GF01	N/A
layer	**mode**
DATA	P
payload_ref	**seq**
GF01_APX_v0 (manifest_check TBD after Press)	2
prev_chain	**sig**
20987847	(witness at I-block)

Note: payload_ref will equal the APX manifest_check once Press (A5–A8) is tallied for this window.