

# HAPD Matrix Transformation

Input Vector

v1
v2
v3

$\times$

HAPD Matrix

1	0	-a1
0	1	-a2
-a1	-a2	a1a2+1

$=$

Output

v1-a1v3
v2-a2v3
v3'

The HAPD algorithm applies this matrix transformation to triple (v1,v2,v3).

Parameters a1, a2 are integer parts of v1/v3 and v2/v3.

The notation v3' represents the transformed value of v3 after one iteration.