

1 Parameters

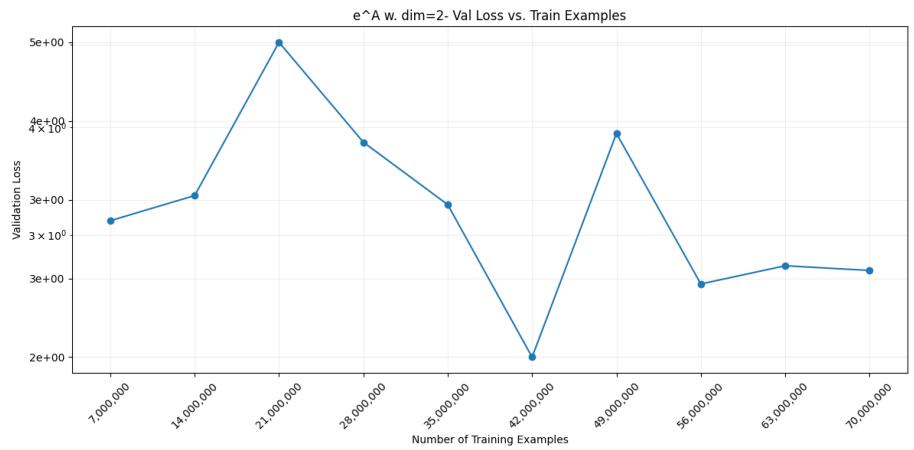
Parameters:

1. `batch_size`: 256
2. `num_epochs`: 1000
3. `total_samples`: 100000
4. `validation_interval`: 100
5. `lr`: 0.001
6. `loss`: *frobenius*

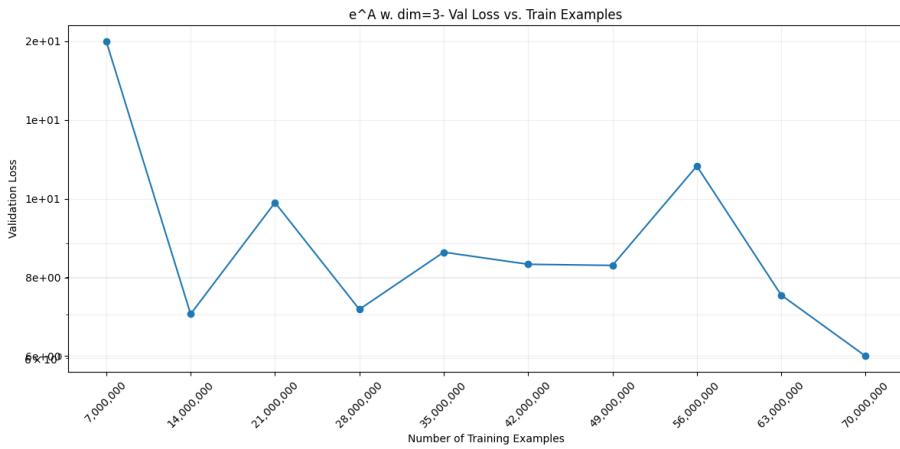
2 Circulant Matrix

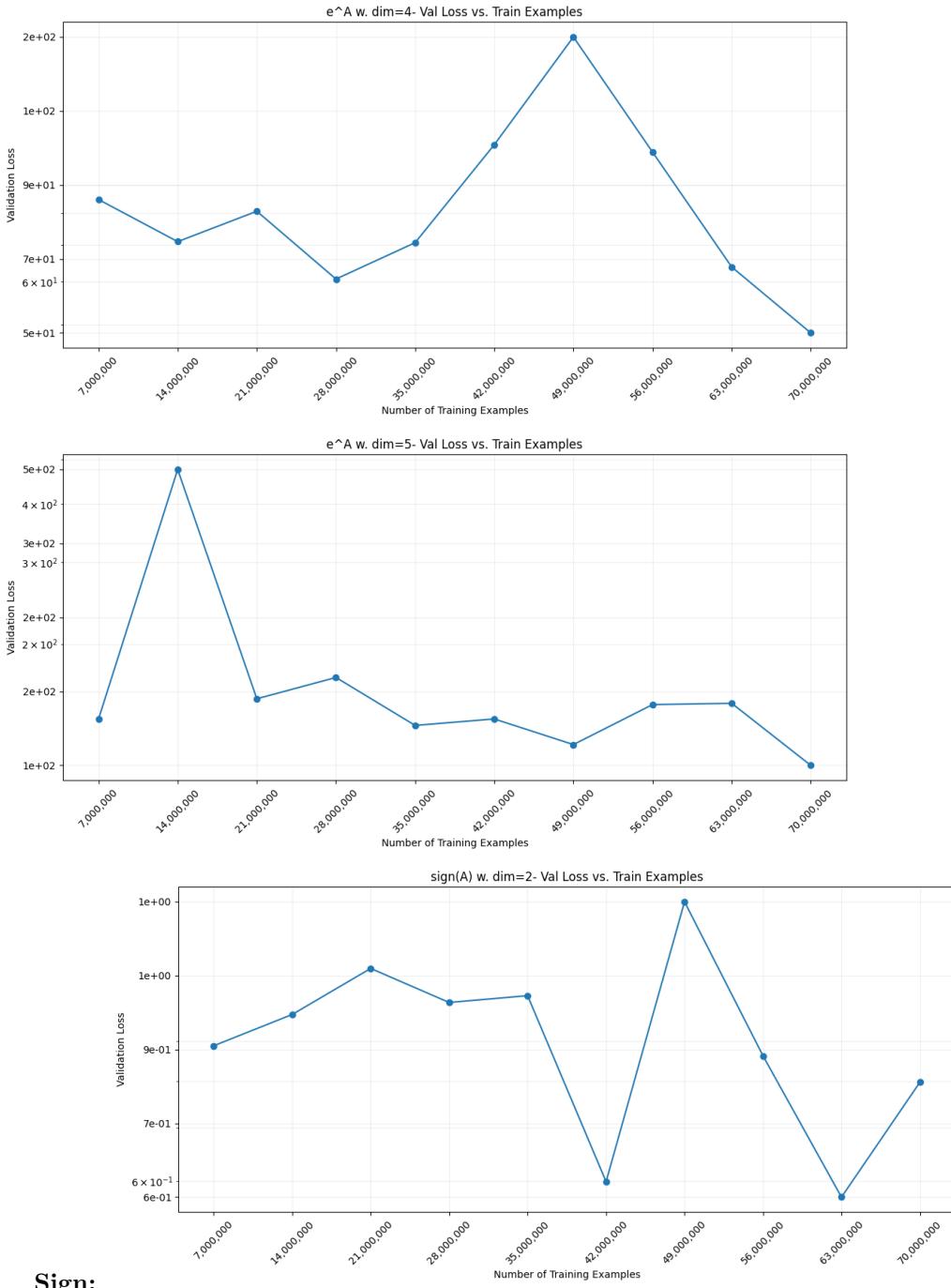
Dimension	Operation		
	Square	Exponential	Sign
1			
2	0.06453	0.6705	0.20165
3	0.06703	1.54619	0.13378
4	0.08183	11.67738	0.09633
5	0.07472	5.85164	0.10384

Square:



Exponential:



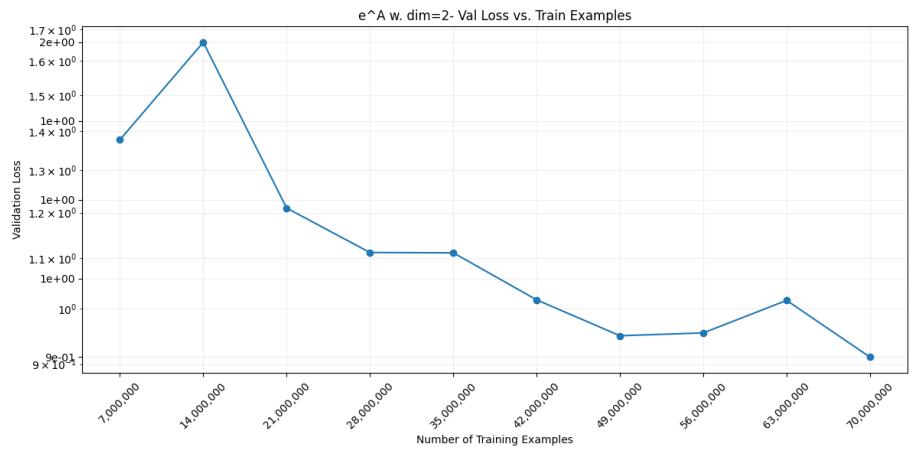




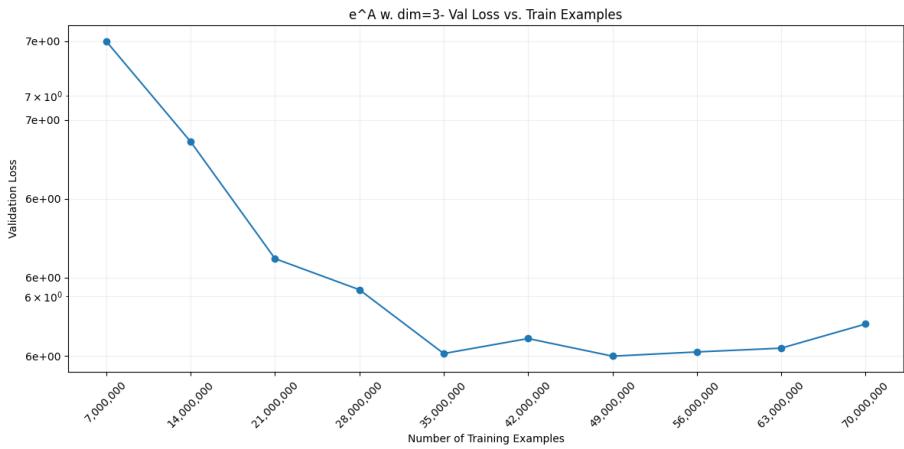
3 General Matrix

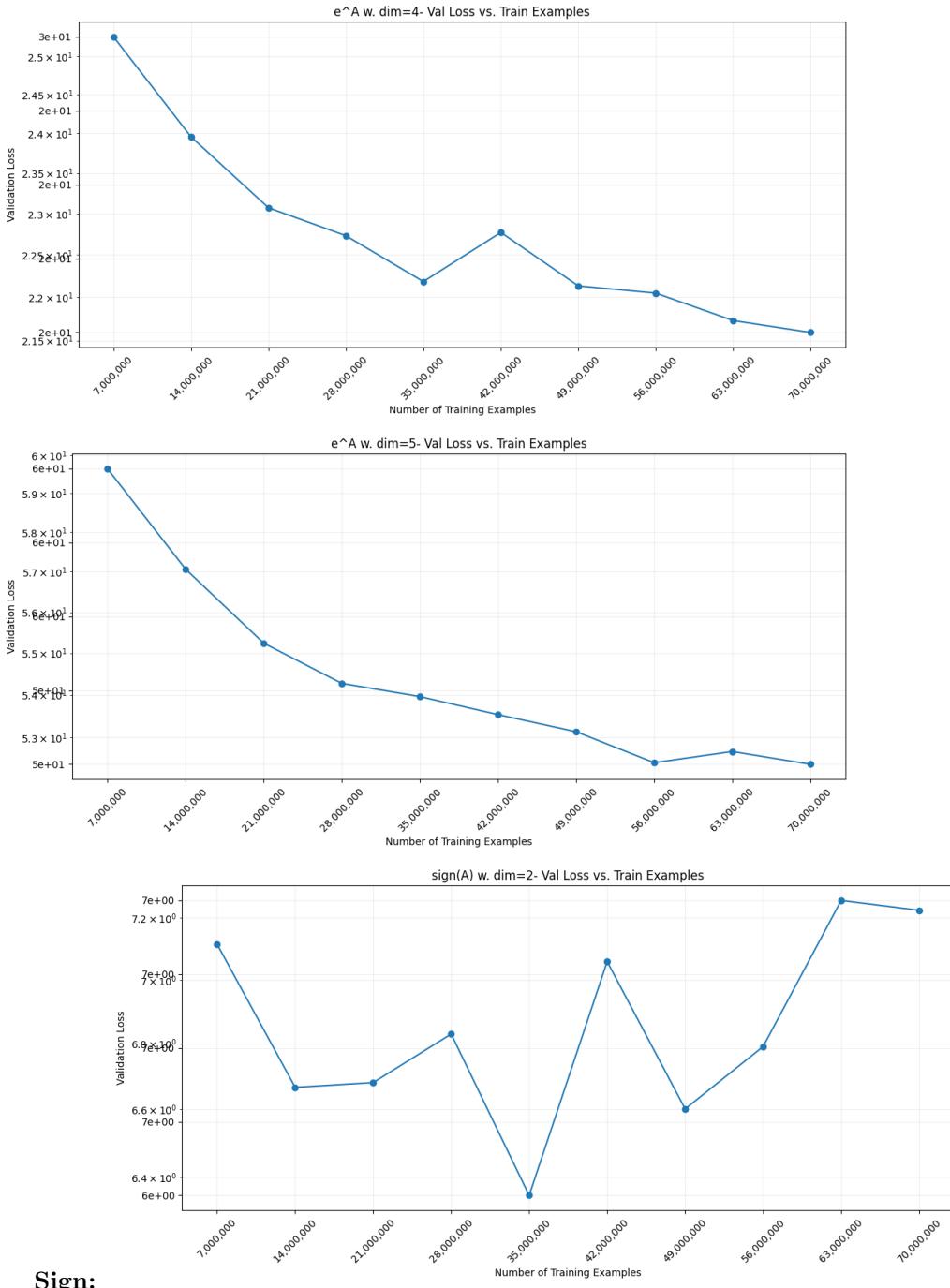
Dimension	Operation		
	Square	Exponential	Sign
1			
2	0.09465	0.337225	1.6088
3	0.14439	0.7358	2.68107
4	0.35234	1.36036	2.60122
5	0.86524	2.05036	2.03080

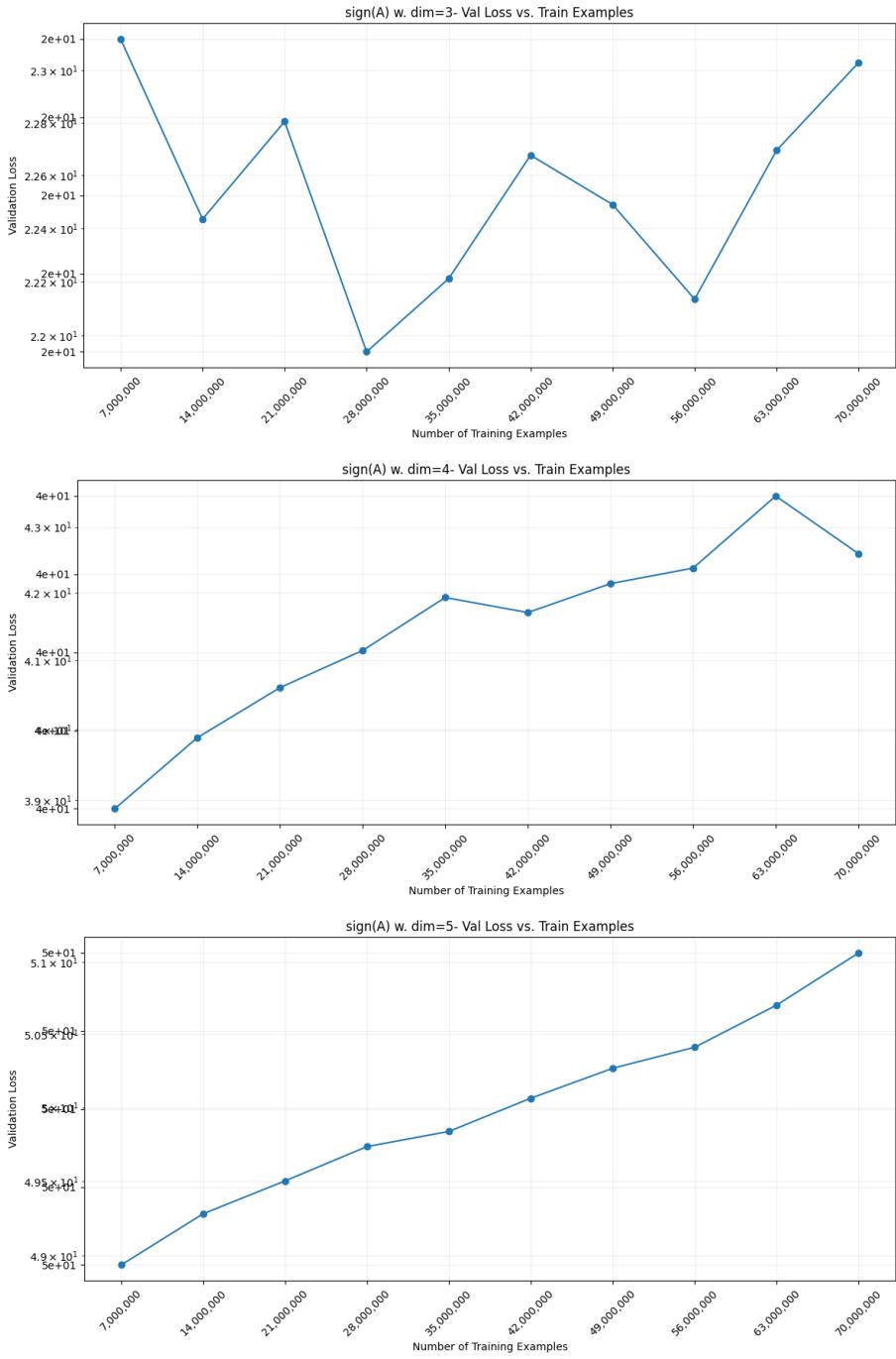
Square:



Exponential:



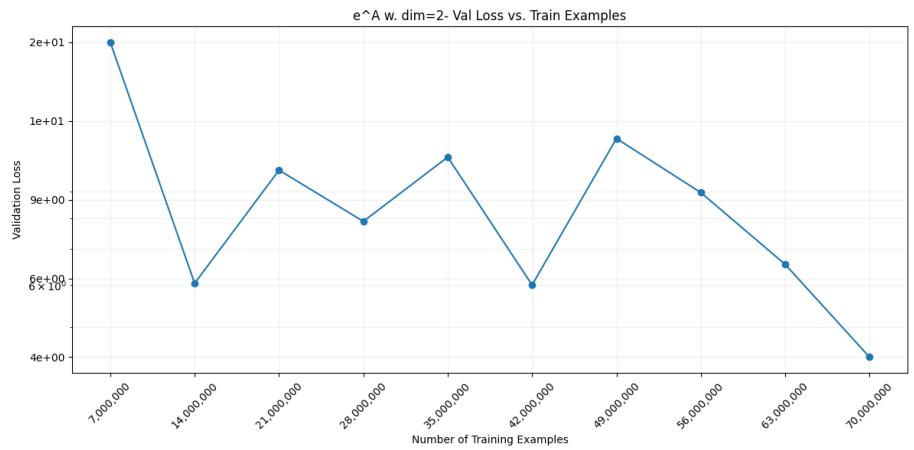




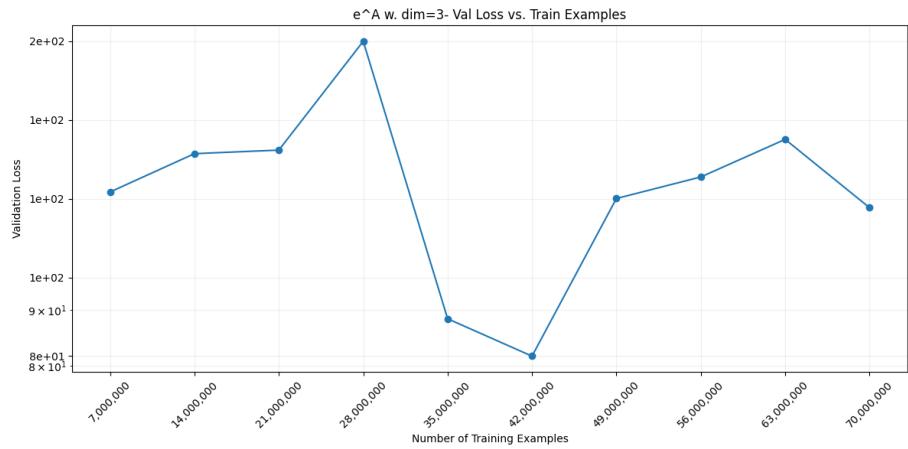
4 H-Matrix

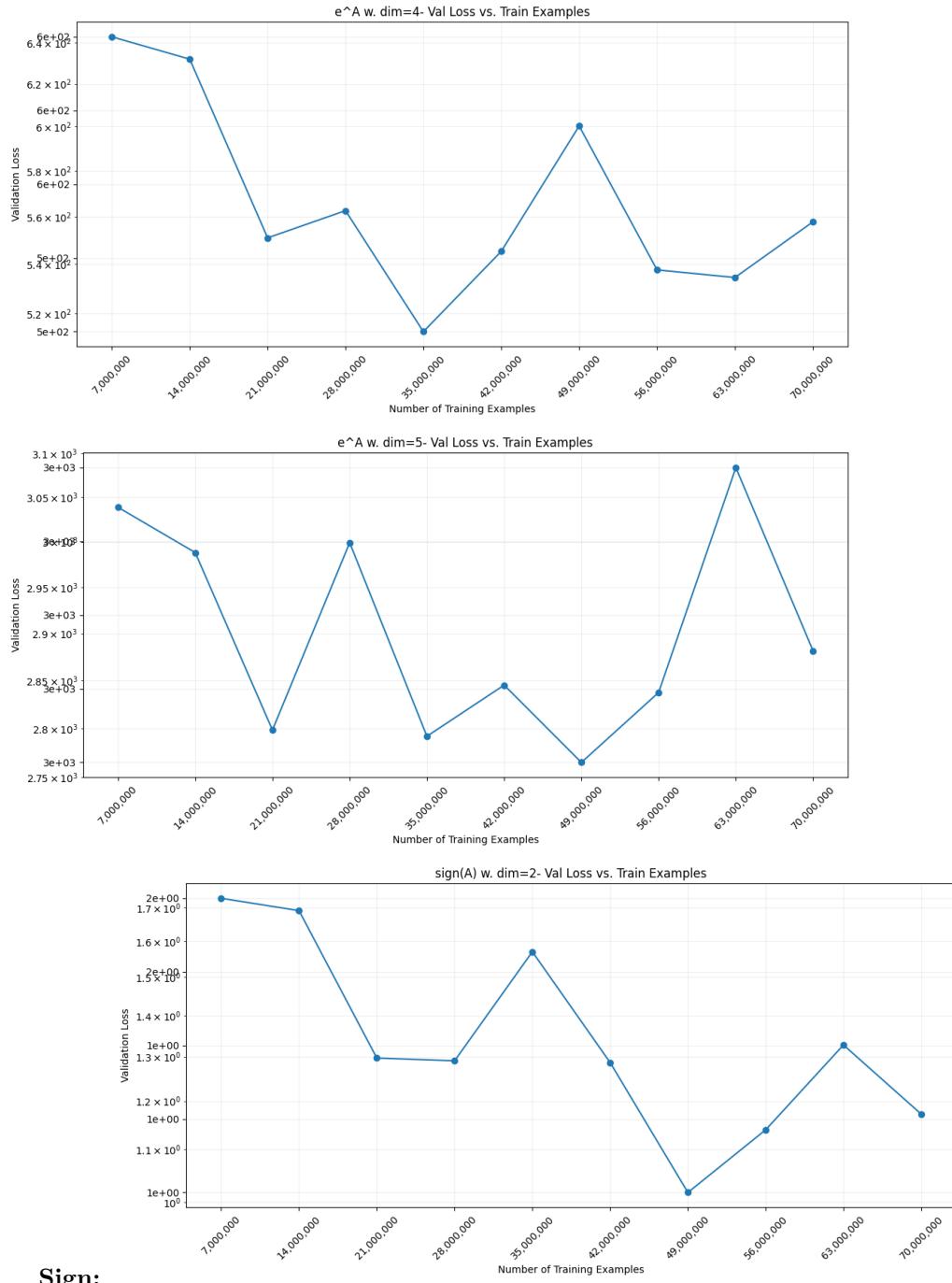
Dimension	Operation		
	Square	Exponential	Sign
1			
2	0.09453	1.2573	0.40105
3	0.12653	11.74111	0.41582
4	0.20973	53.63145	0.39164
5	0.36378	79.20102	0.31988

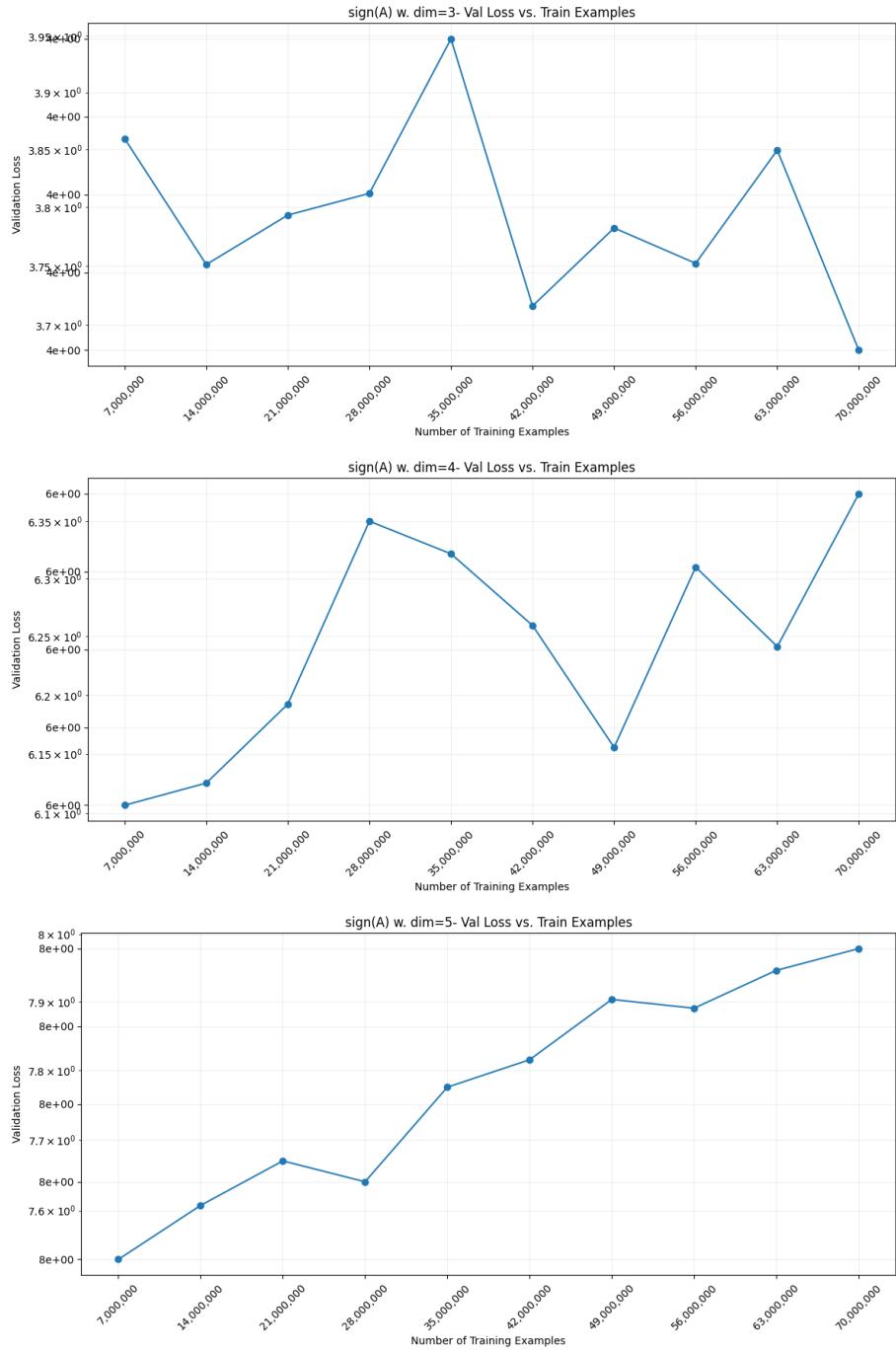
Square:



Exponential:



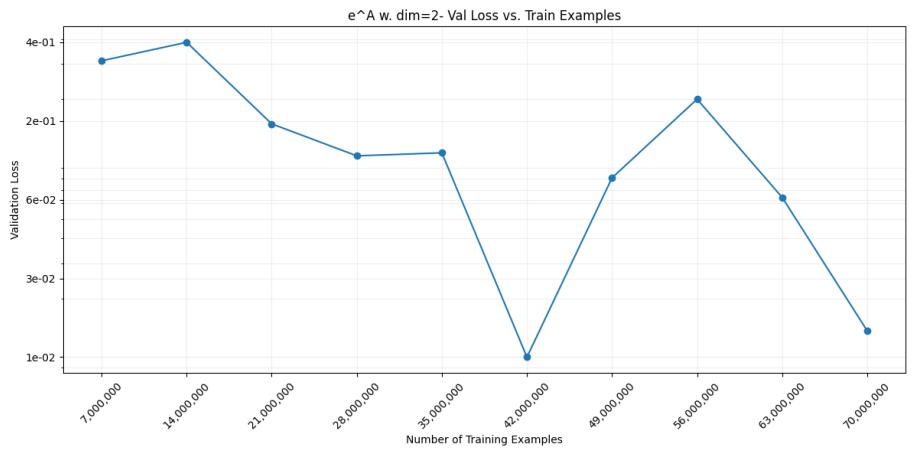




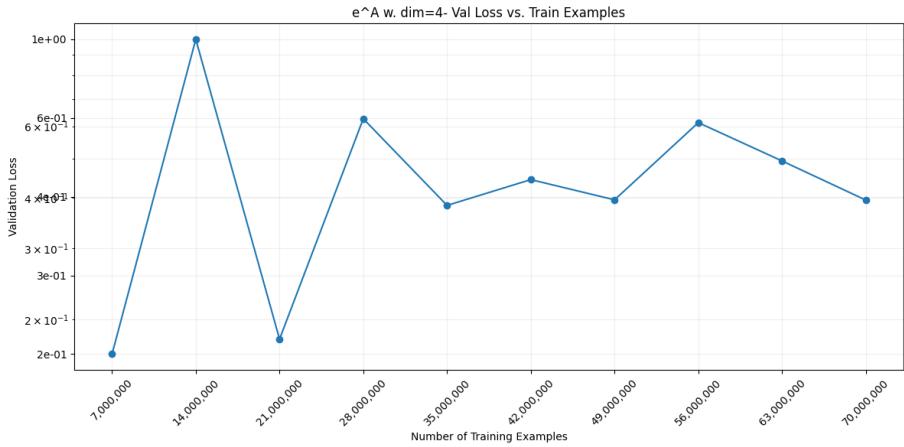
5 Hadamard Matrix

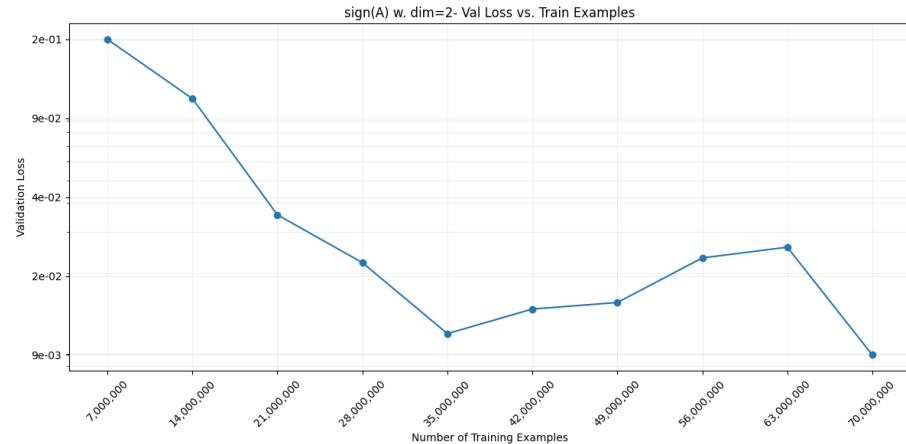
Dimension	Operation		
	Square	Exponential	Sign
1			
2	0.02865	0.00345	0.00223
3			
4	0.01635	0.02465	0.00099
5			

Square:

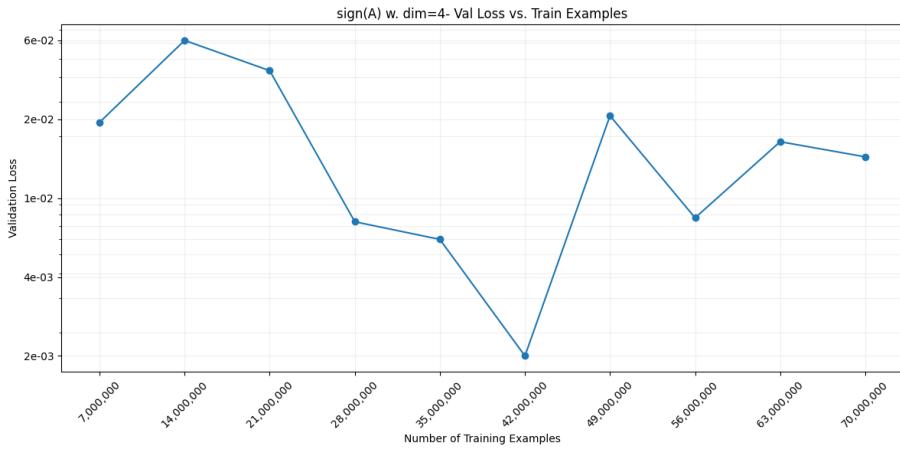


Exponential:





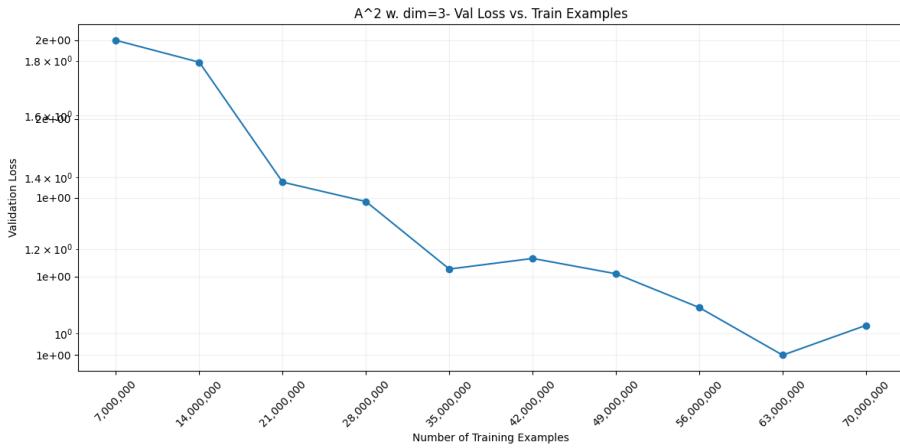
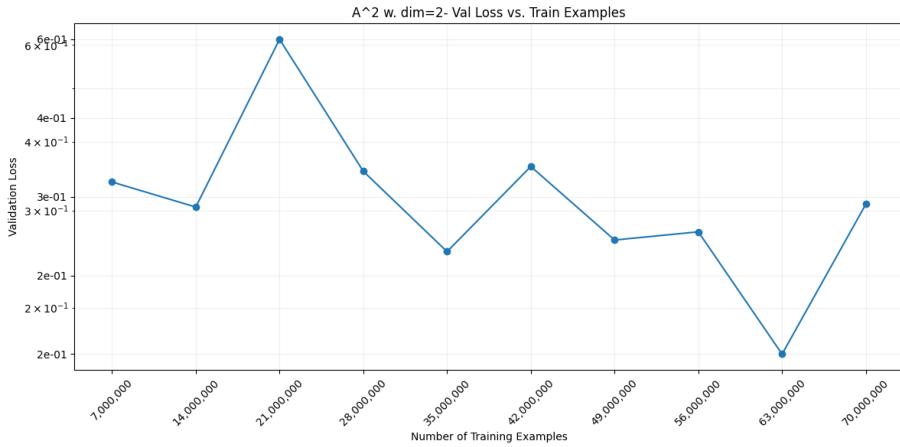
Sign:

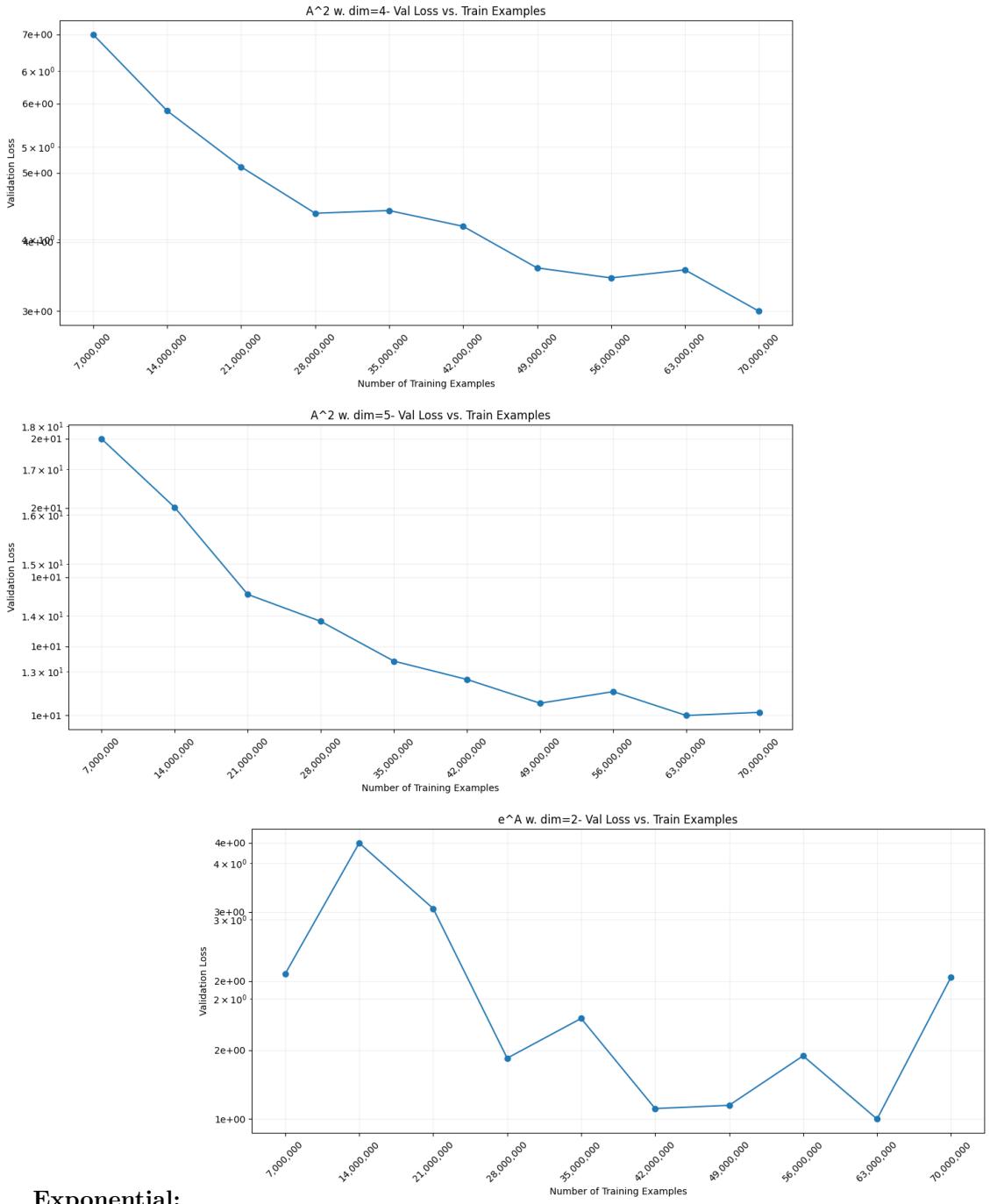


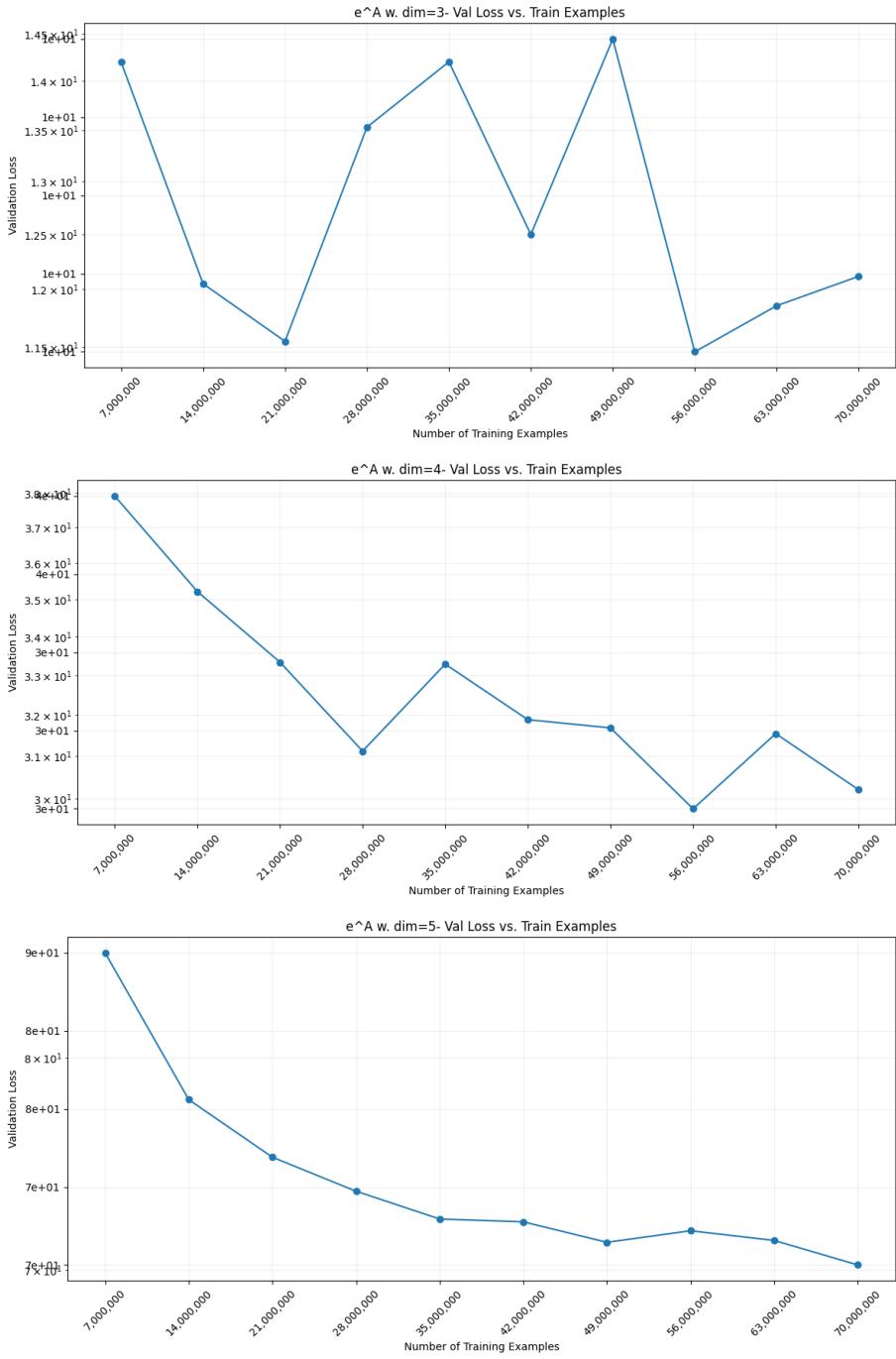
6 M-Matrix

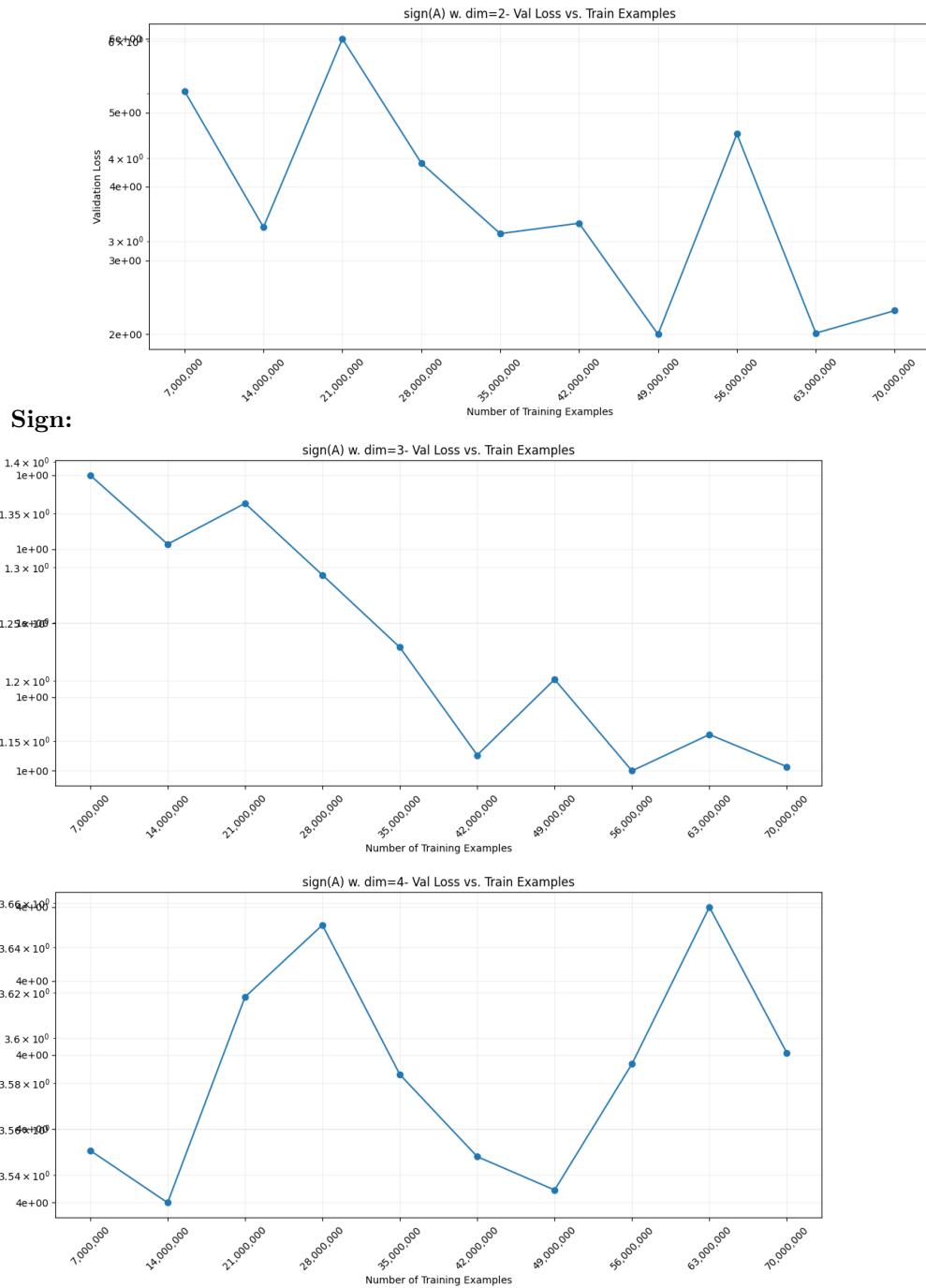
Dimension	Operation		
	Square	Exponential	Sign
1			
2	0.07518	0.5025	0.68773
3	0.11422	1.19566	0.12911
4	0.20986	1.90584	0.22978
5	0.48896	2.70810	0.26907

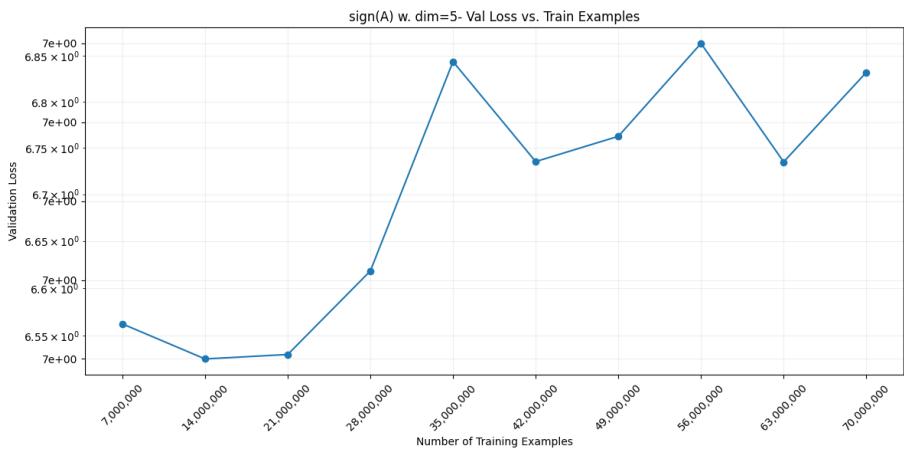
Square:







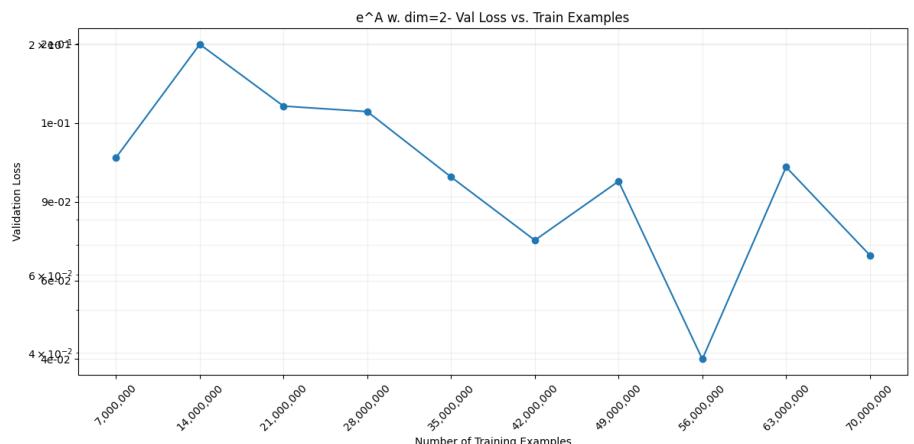




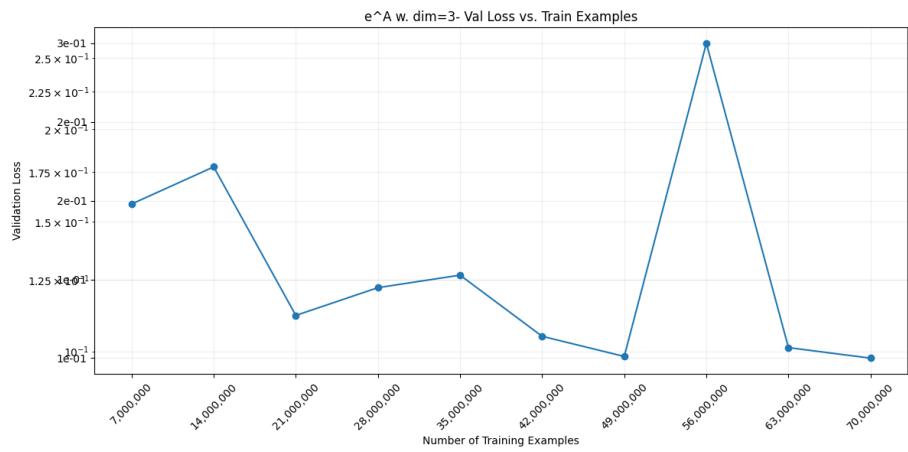
7 Orthogonal Matrix

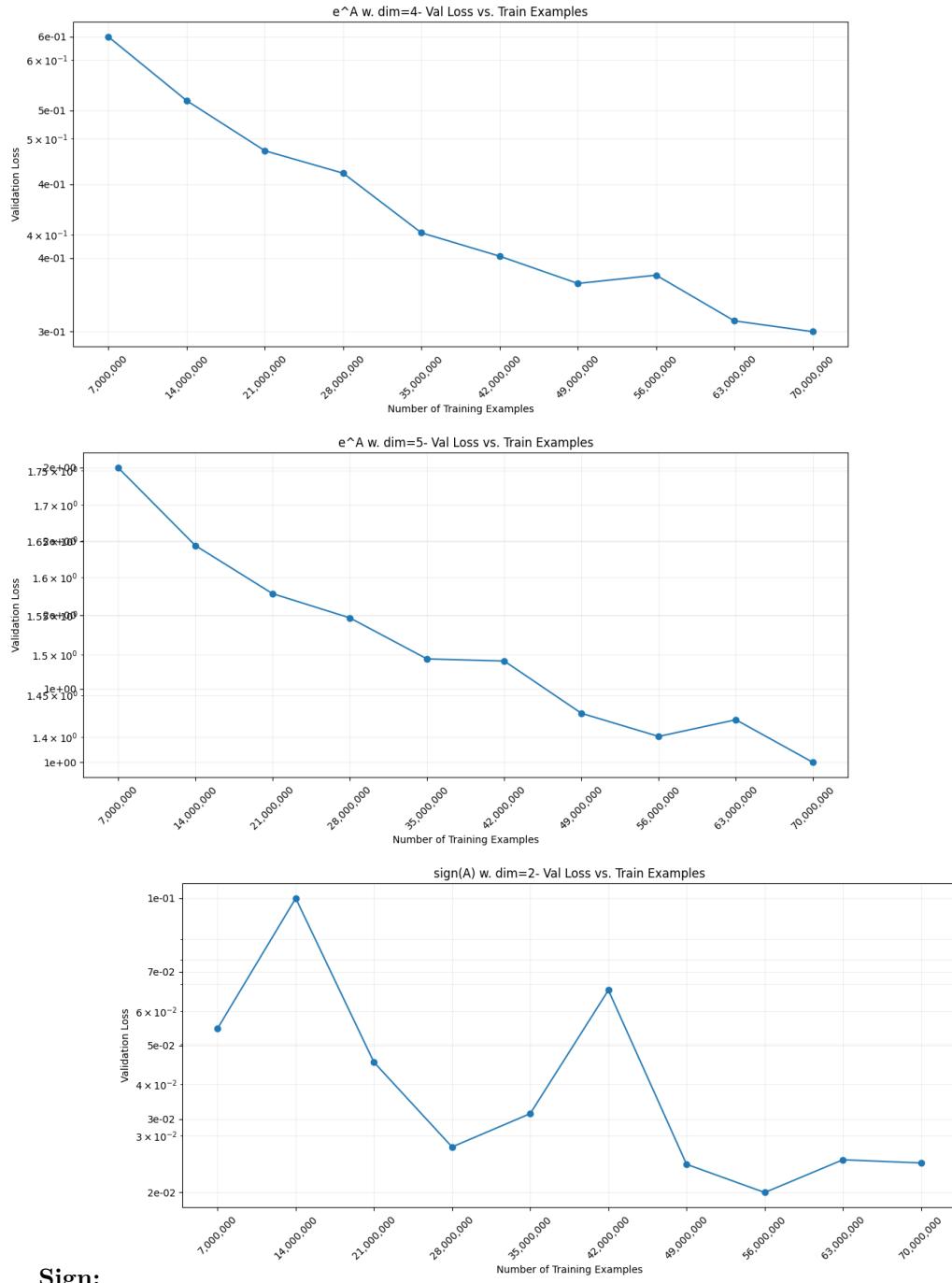
Dimension	Operation		
	Square	Exponential	Sign
1			
2	0.00273	0.01658	0.00648
3	0.01364	0.01087	0.00762
4	0.02953	0.02006	0.12086
5	0.11202	0.05474	0.26782

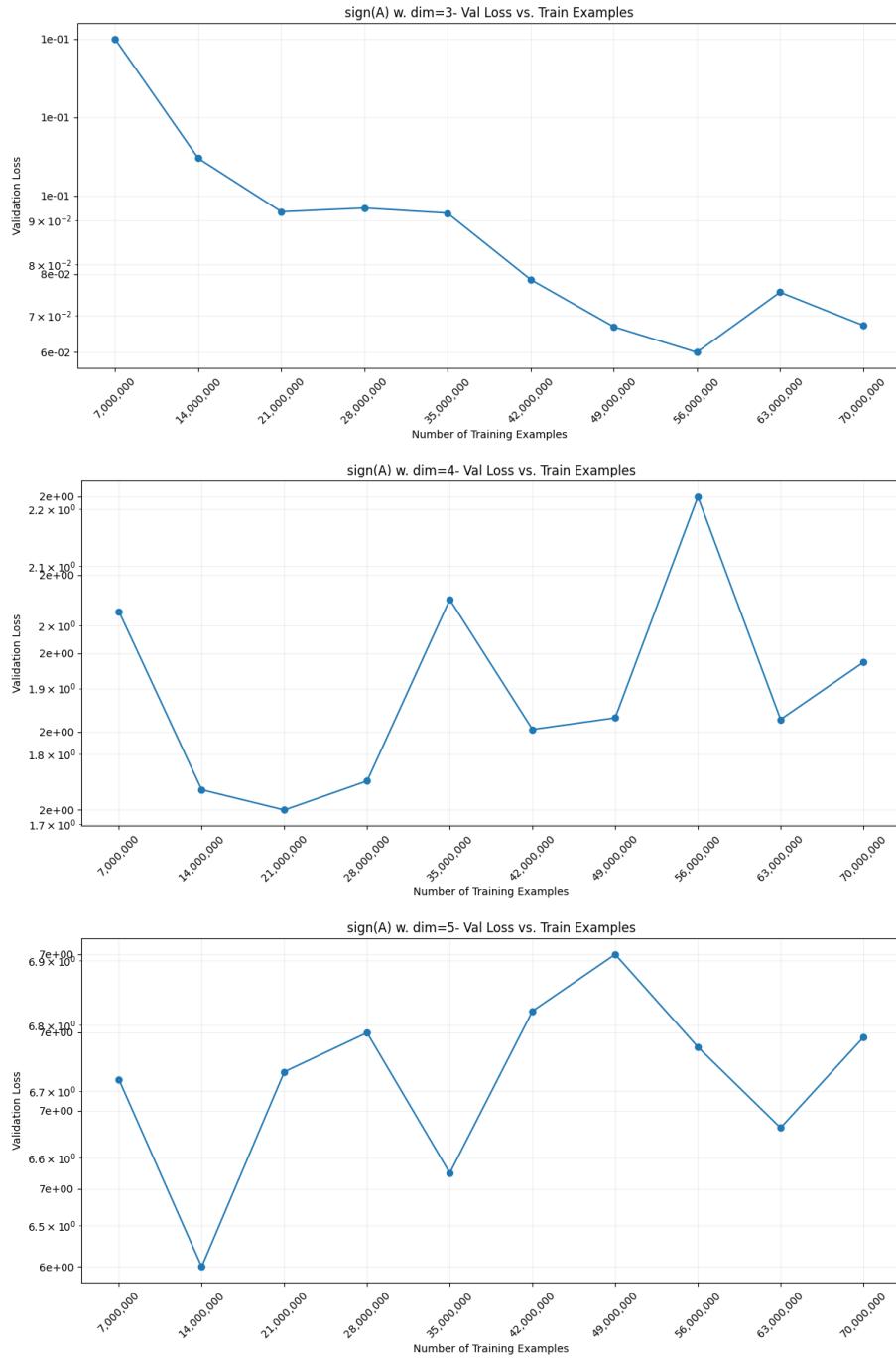
Square:



Exponential:



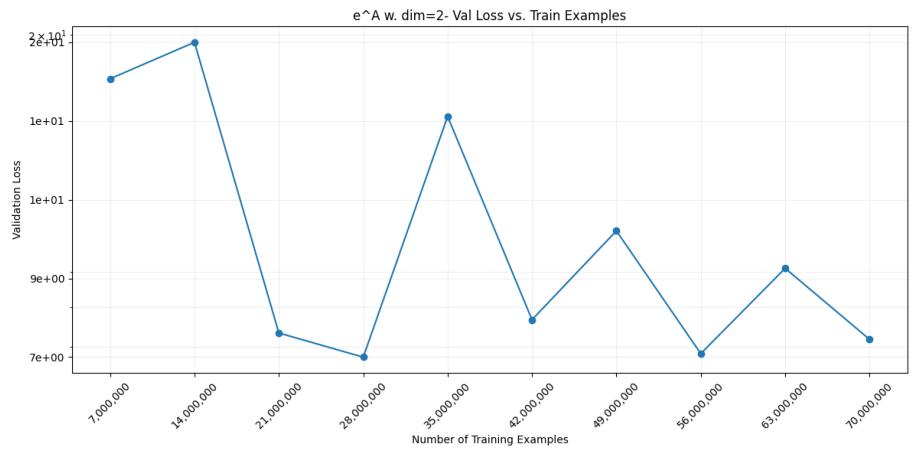




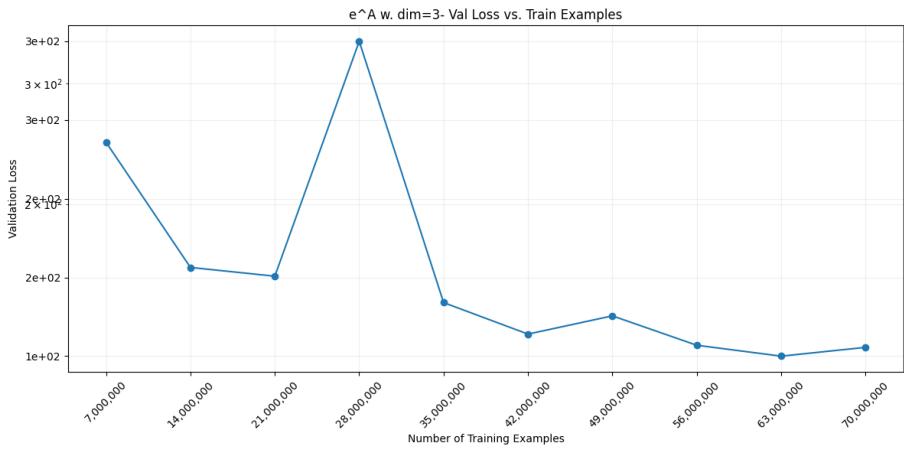
8 P-Matrix

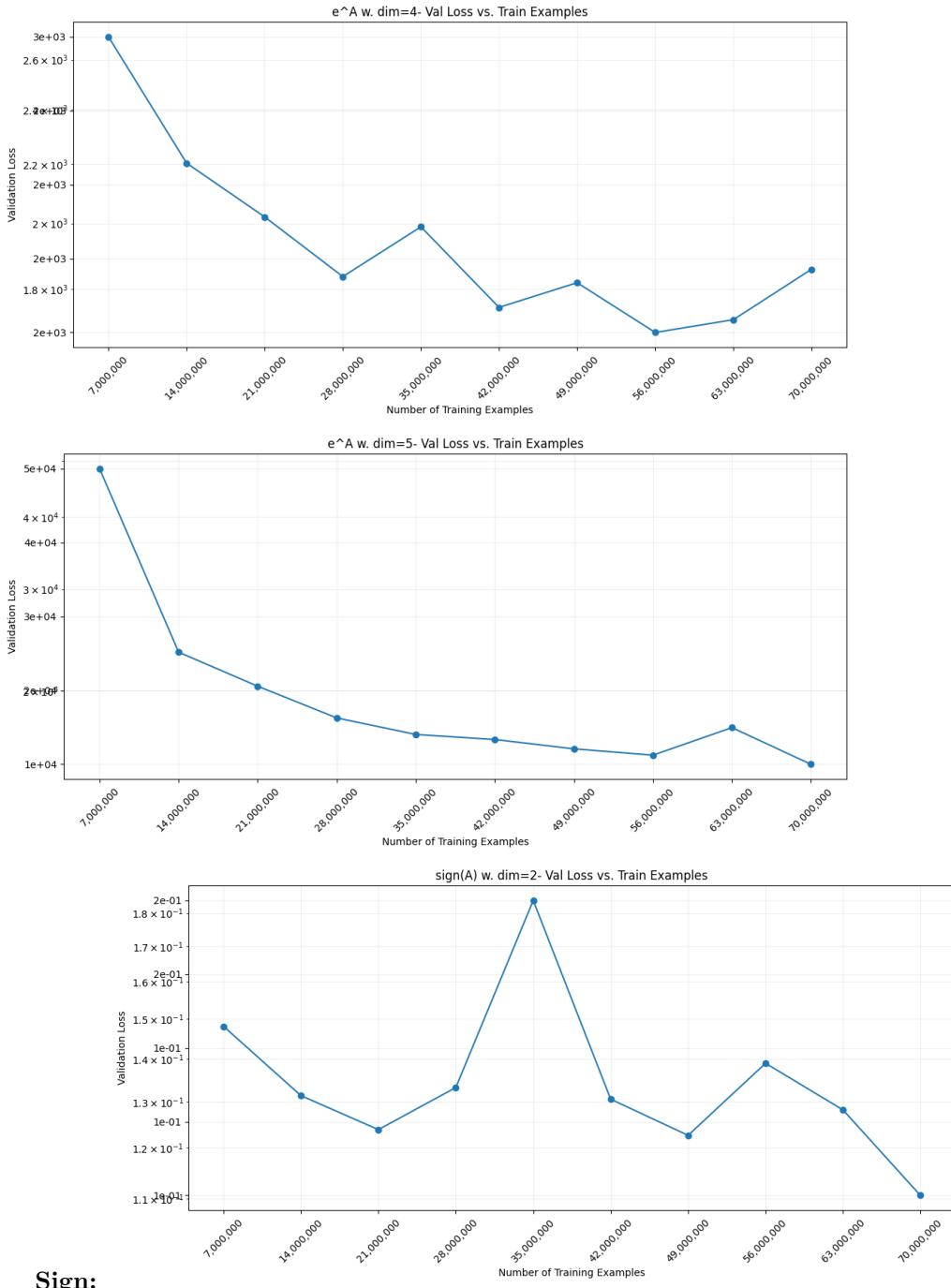
Dimension	Operation		
	Square	Exponential	Sign
1			
2	0.28173	2.12713	0.01943
3	0.23614	15.73897	0.00263
4	0.55278	115.00813	0.00186
5	1.00911	580.55568	0.00033

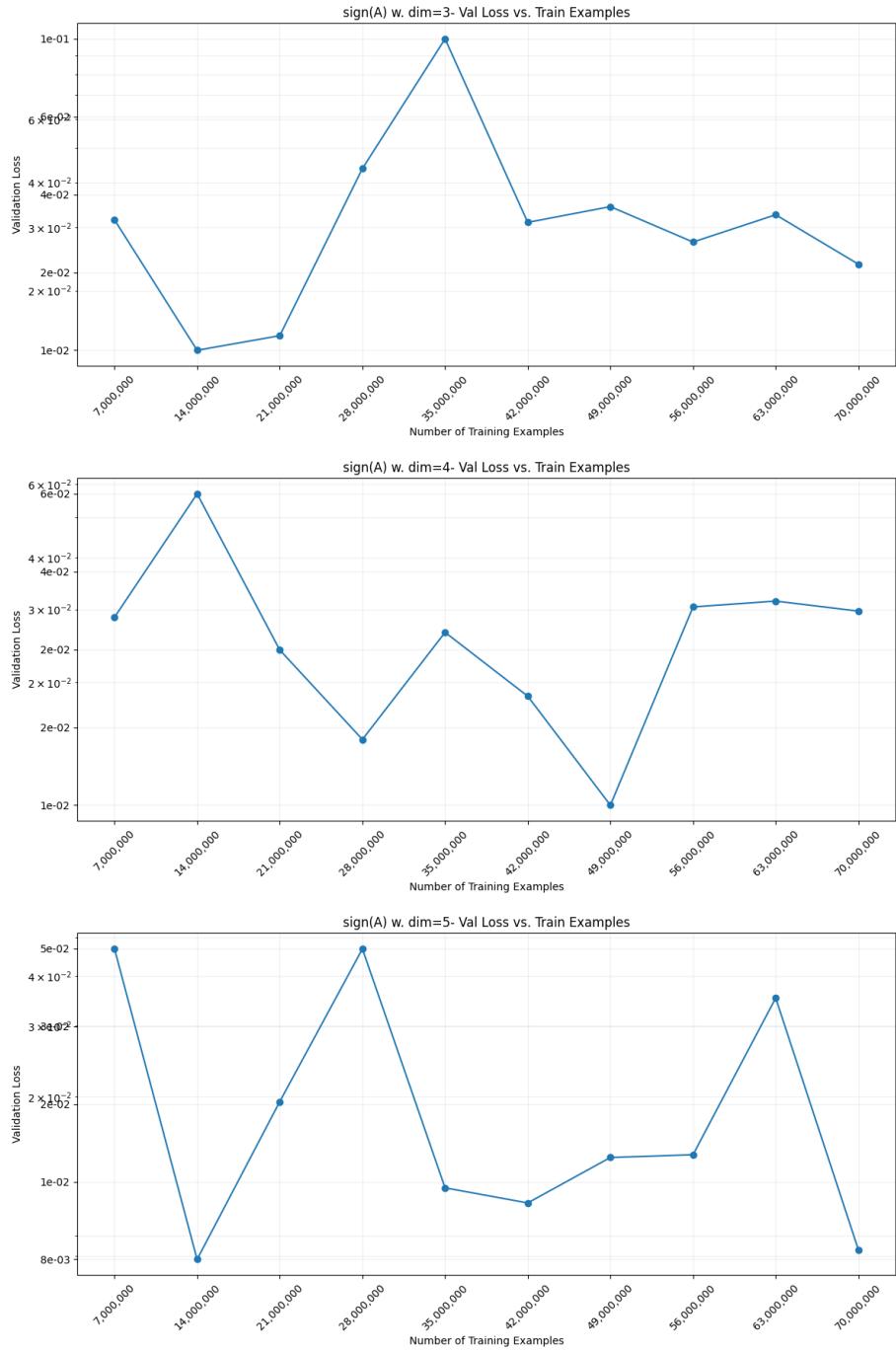
Square:



Exponential:



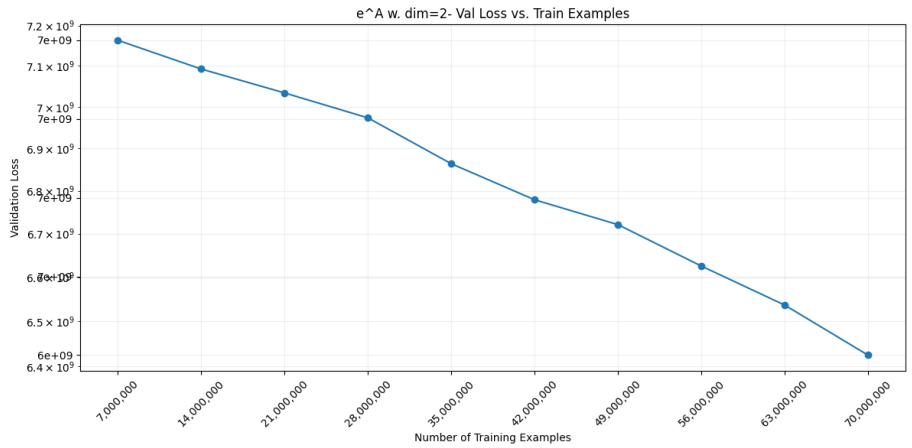




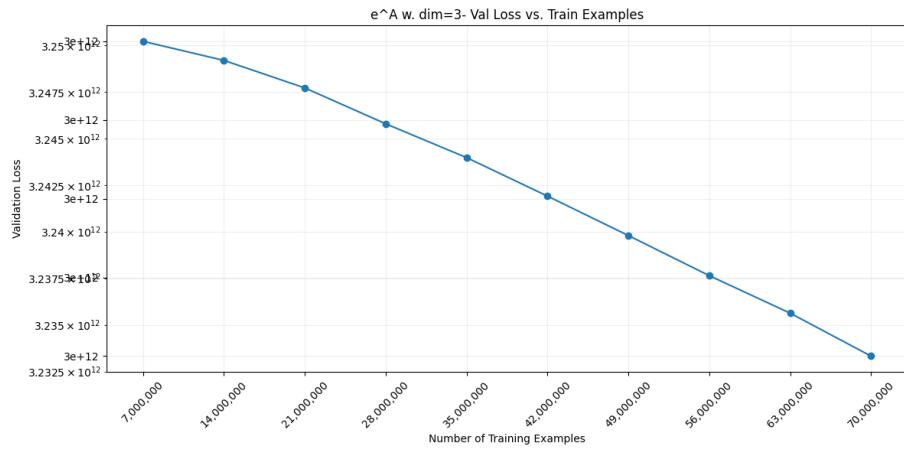
9 Positive Definite Matrix

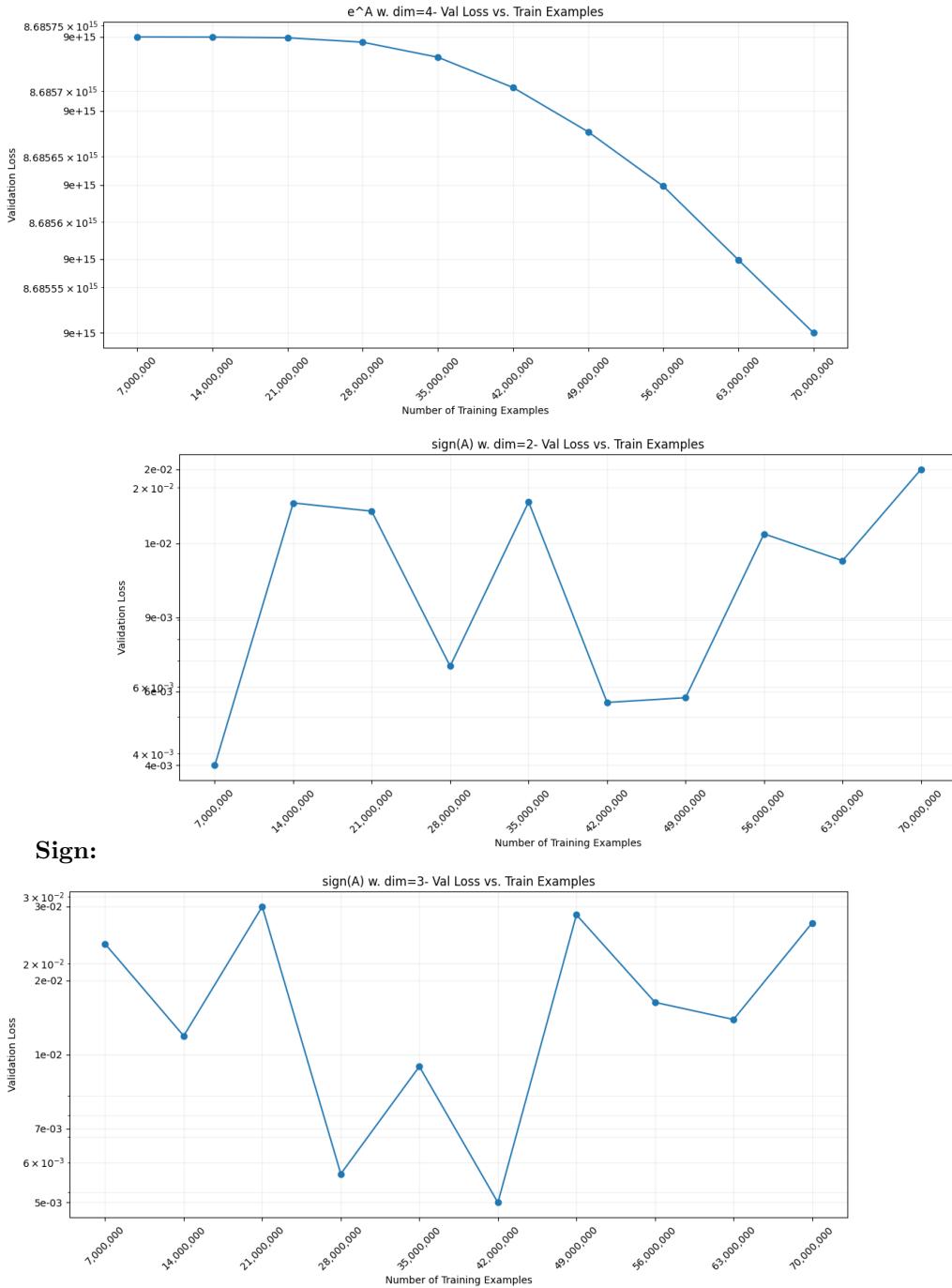
Dimension	Operation		
	Square	Exponential	Sign
1			
2	1.08228	245142328.12765	0.00558
3	1.4478	68565297064.37664	0.00284
4	2.49692	242565013714770.44	0.00163
5	3.90584	4e+23	0.00152

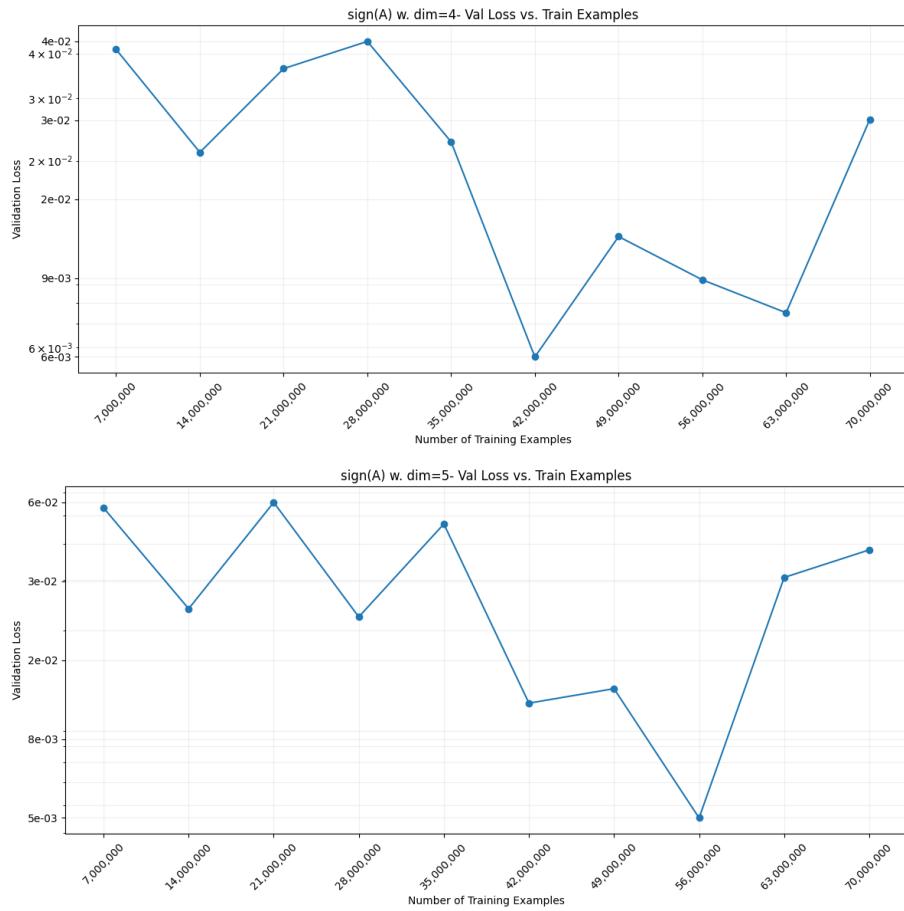
Square:



Exponential:



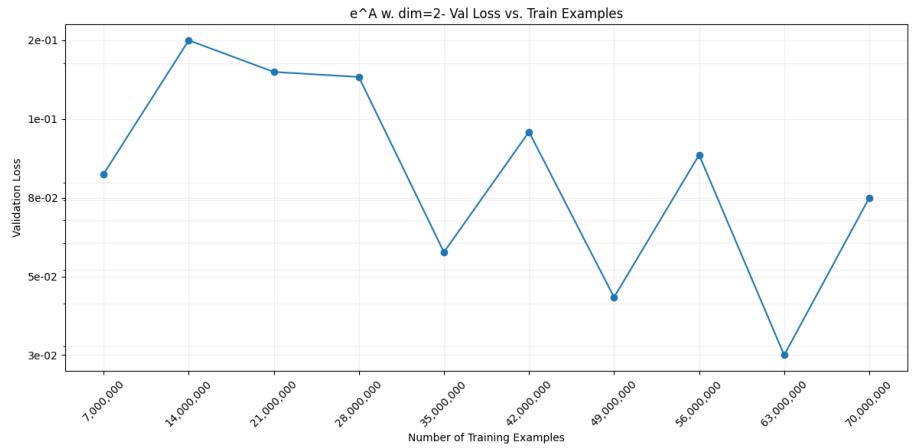




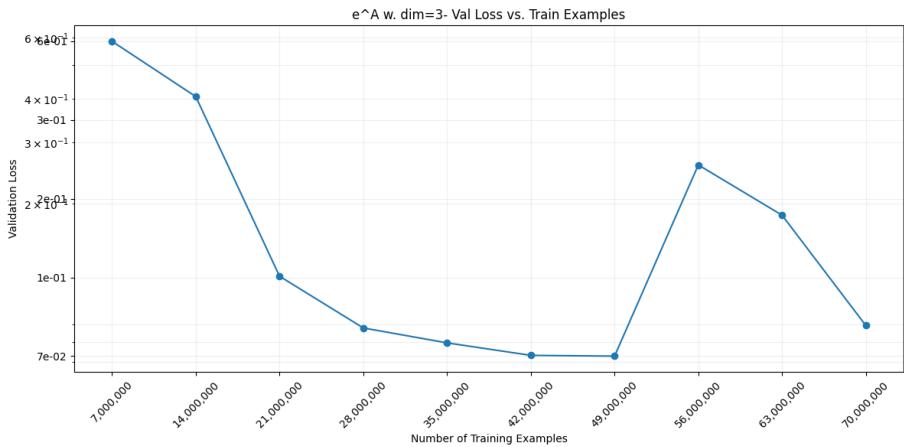
10 Stochastic Matrix

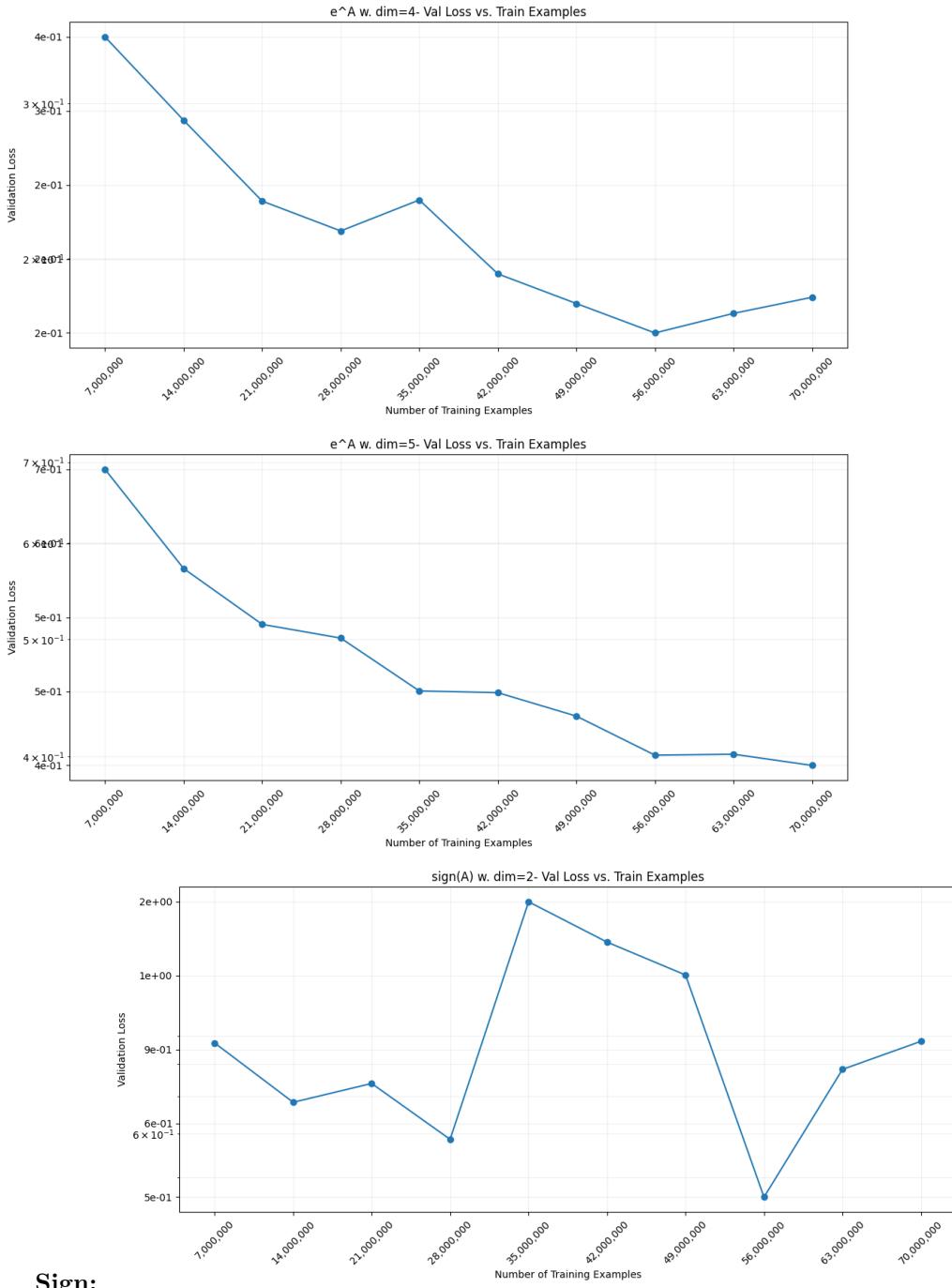
Dimension	Operation		
	Square	Exponential	Sign
1			
2	0.01168	0.02023	0.20373
3	0.00657	0.00986	1.11422
4	0.00946	0.01129	1.72944
5	0.01674	0.01570	1.61112

Square:



Exponential:



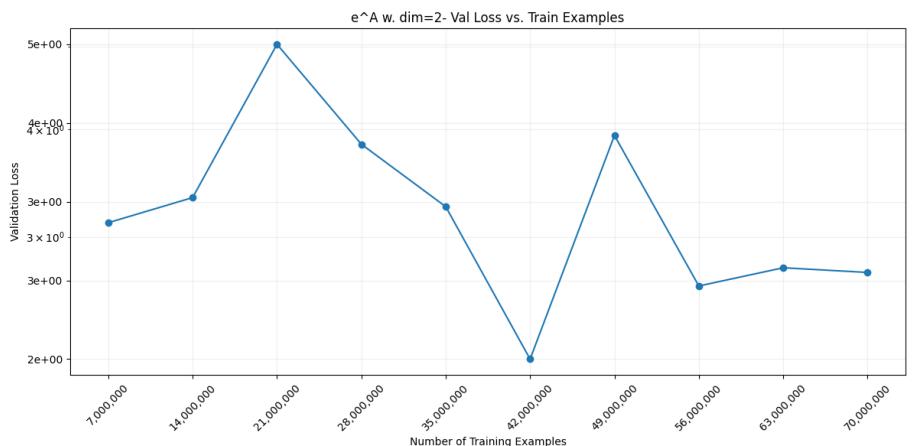




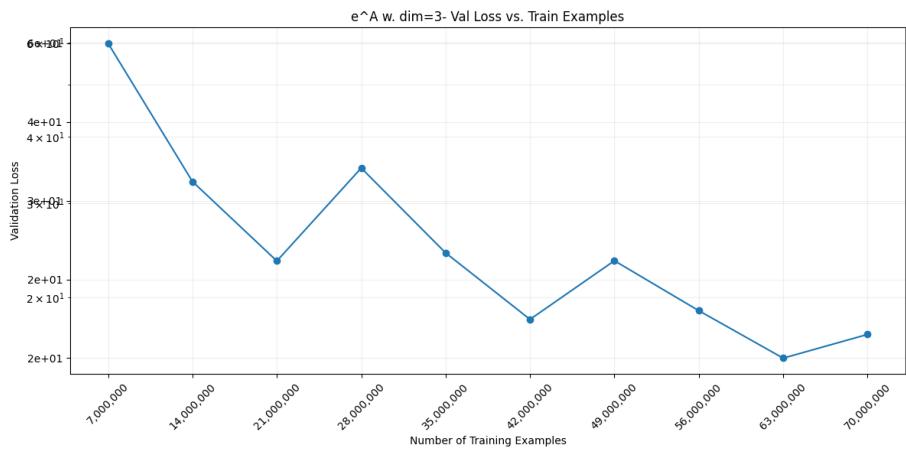
11 Toeplitz Matrix

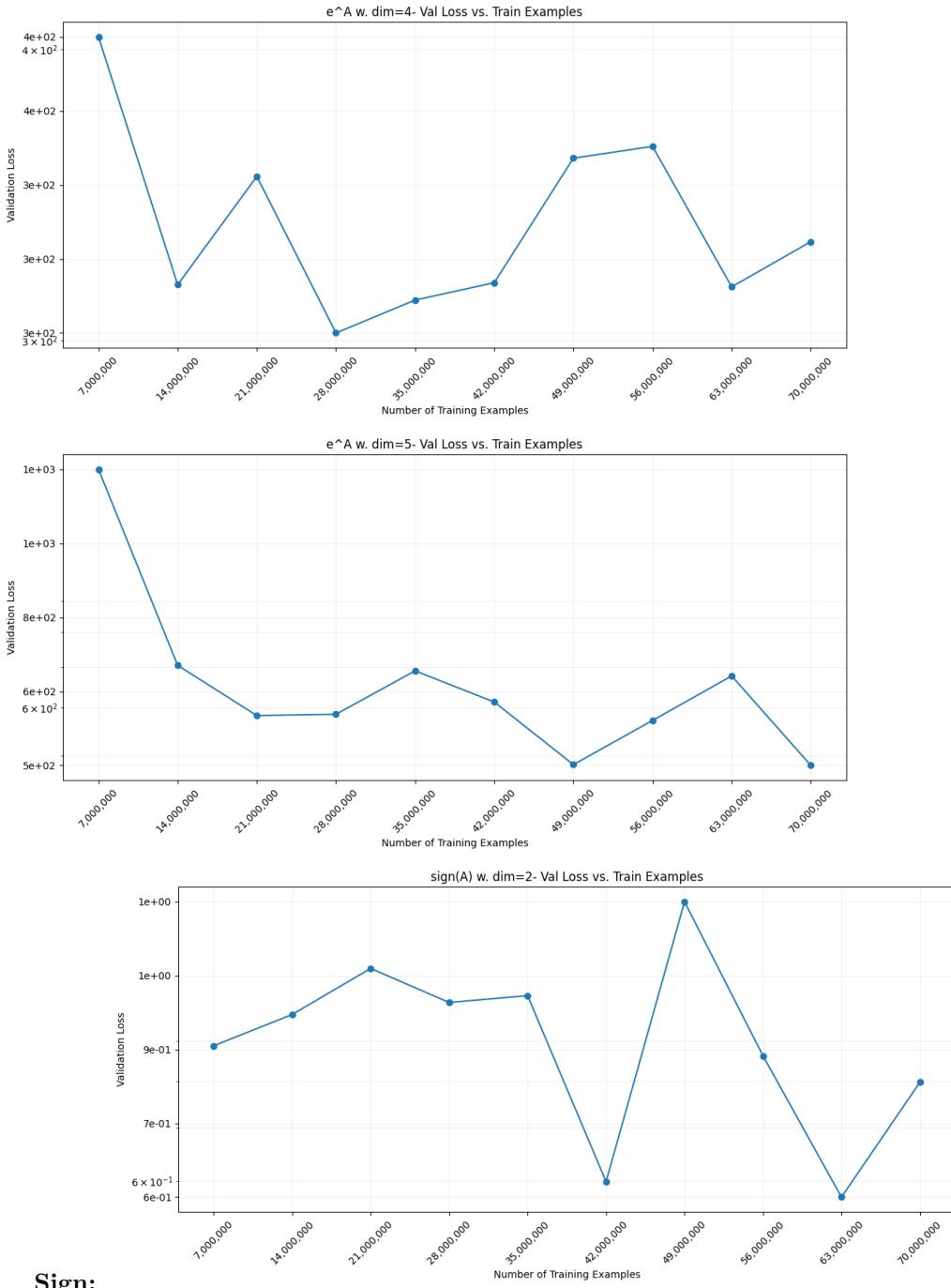
Dimension	Operation		
	Square	Exponential	Sign
1			
2	0.06453	0.6705	0.20165
3	0.08621	1.87376	0.19352
4	0.08376	14.56536	0.16744
5	0.08579	16.57841	0.15444

Square:



Exponential:

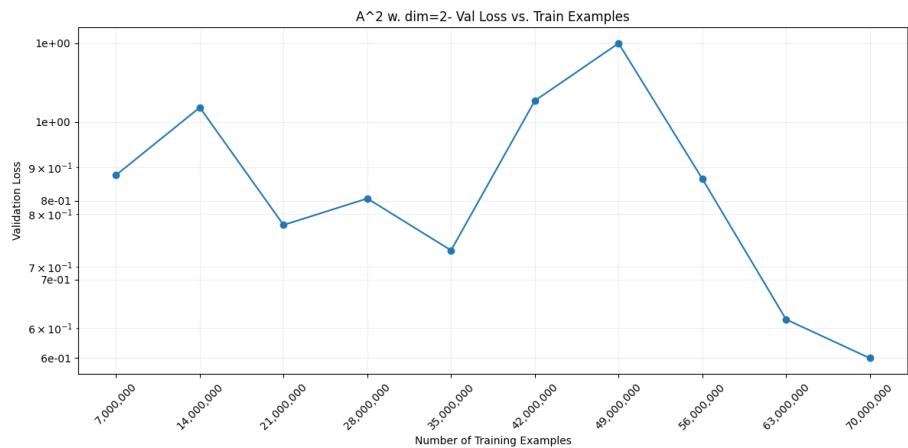




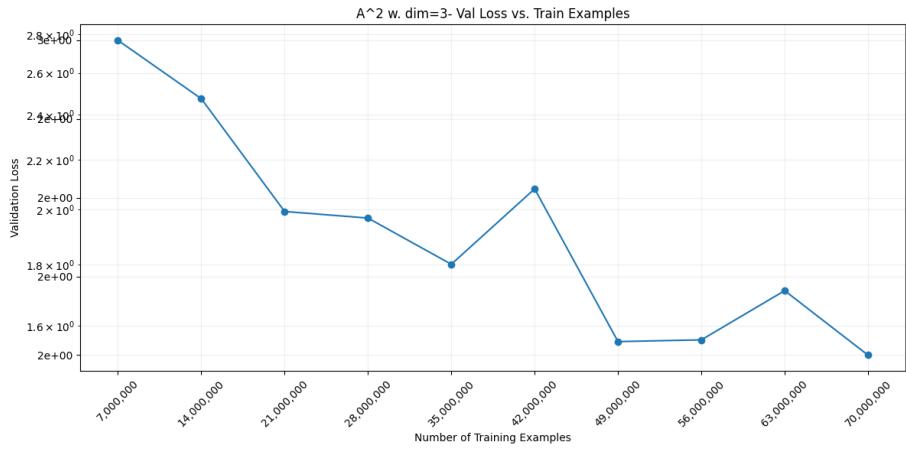


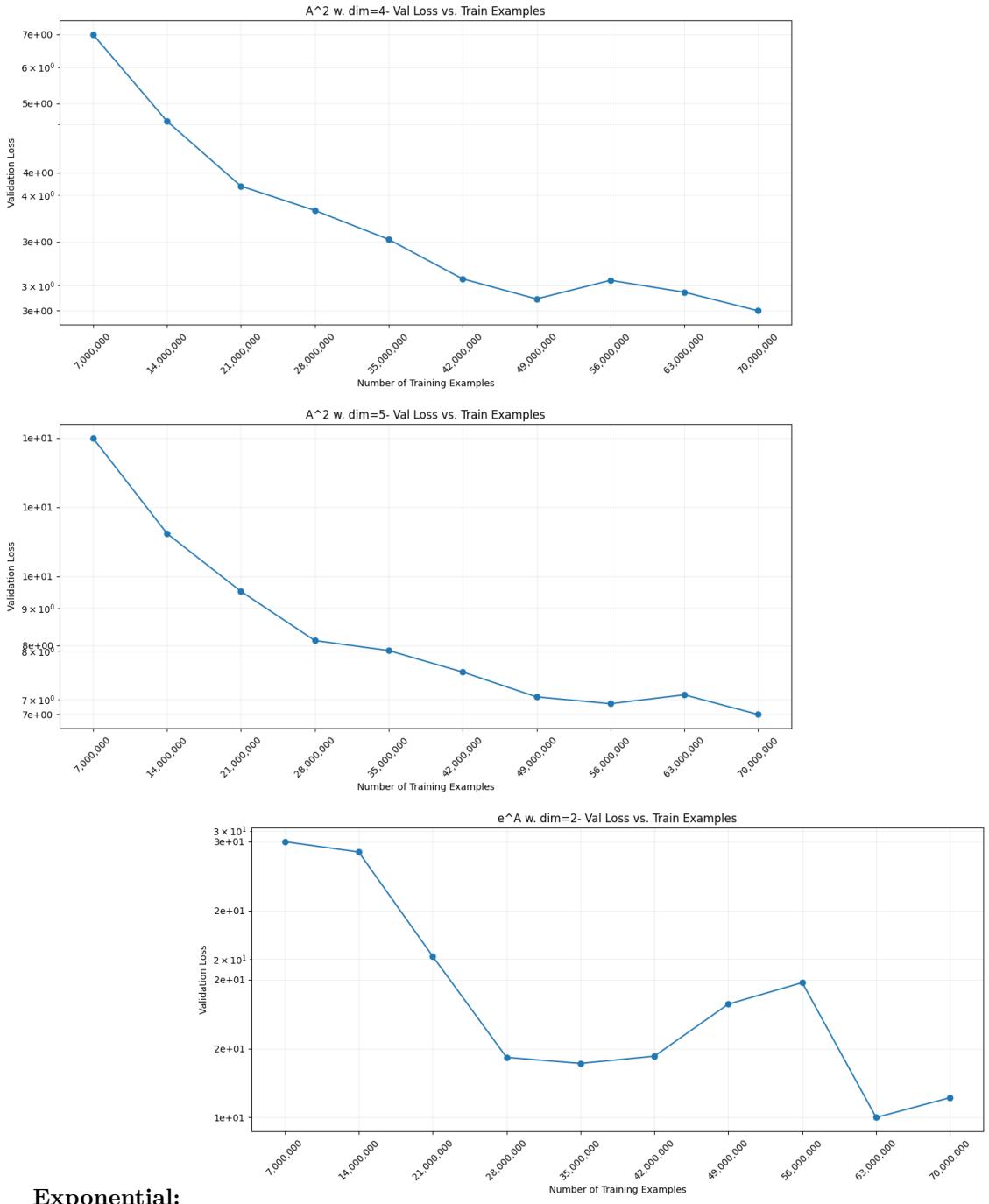
12 Wigner Matrix

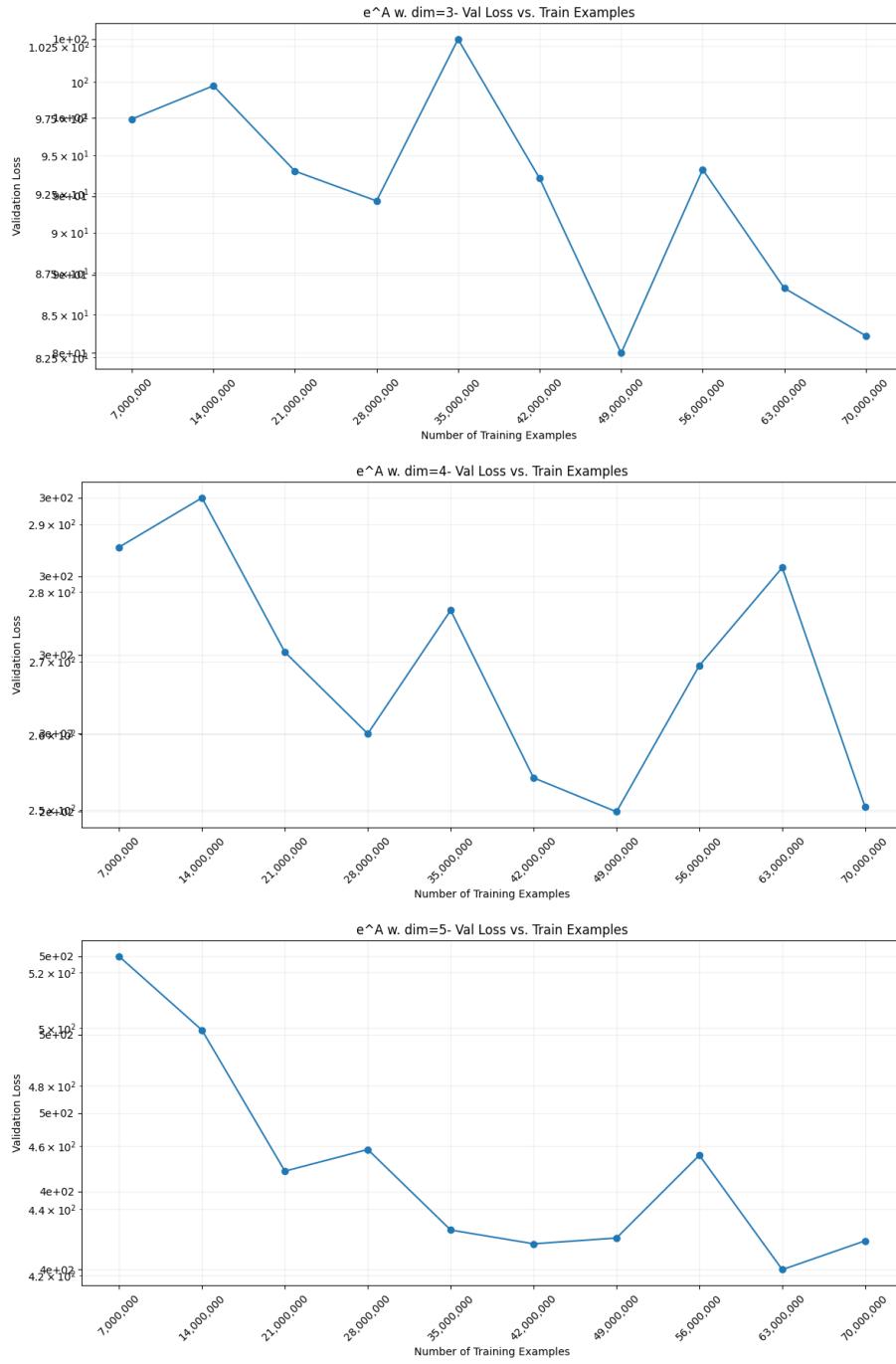
Dimension	Operation		
	Square	Exponential	Sign
1			
2	0.1389	6.73885	0.33918
3	0.16503	12.67440	0.38332
4	0.17417	13.55982	0.43088
5	0.27733	30.17961	0.39328

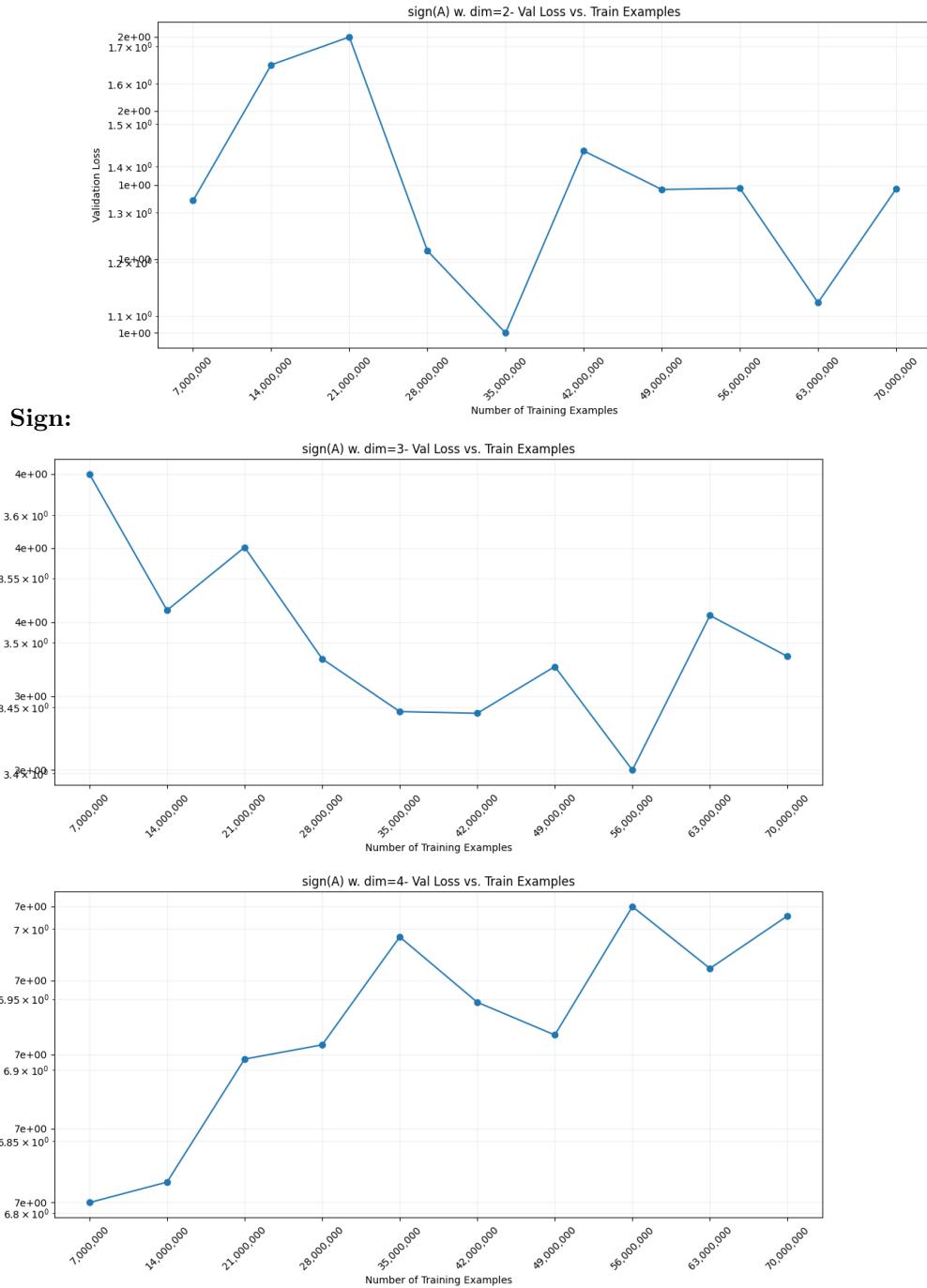


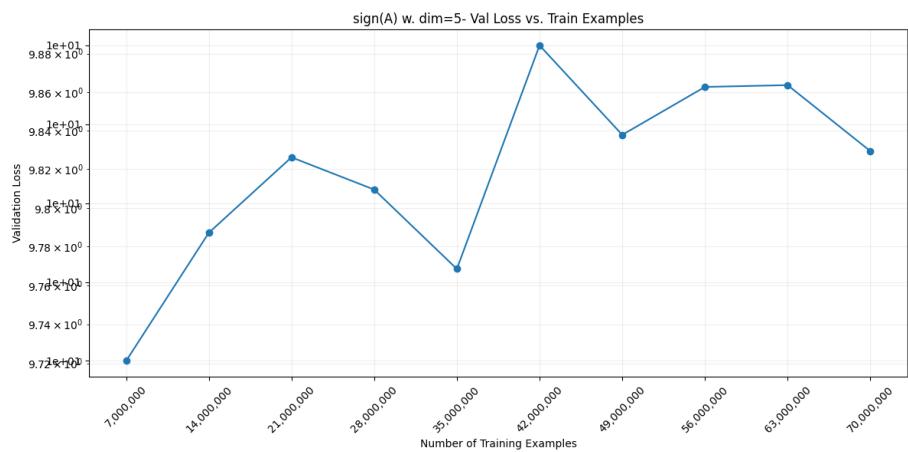
Square:





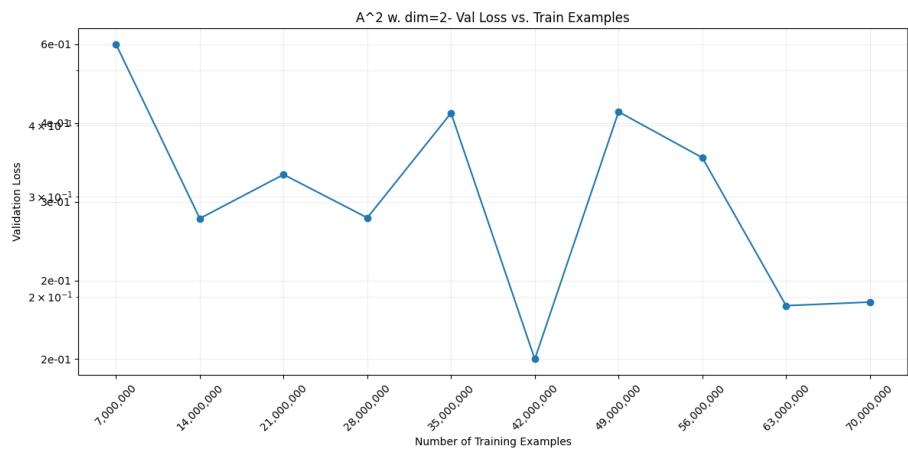






13 Z-Matrix

Dimension	Operation		
	Square	Exponential	Sign
1			
2	0.04598	0.39958	0.06298
3	0.22893	7.18144	0.23314
4	0.25395	36.72591	0.28808
5	0.56775	148.24121	0.18909



Square:

