iii) The effect of small changes in the magnitude of the variation of the interest rate are shown in problems 2, 3 and 4 on the previous page, and summarized in the table

|| I am marking your absolute errors here ↓

Magnitude of variation	Amount owed at end of Year 15	Difference in amount owed	Change in amount owed / Change in magnitude of variation
0.02	240202488	0.0	
0.0201	24028.26253 ✓	801373	2/2 ~80000 ✓
0.021	24100.03726	79.78846 ✓	~80000
0.03	24783.15988	762.91108	~76000

These are not really small changes. Usually we go for ~ 1/0

The differences in the amount owed at the end of year 15 are larger than the larger the magnitude of variation of interest rates, by factors of around 80000. The relationship is absolutely ill conditioned wrt small changes in the magnitude of the variation of interest rates 3/3.

Current Package : Recrel

First Order Recurrence Relation : Ur+1 = a(r)Ur + p(r)

Problem 1 Ur+1 = 1.1+0.02cos(2*pi*r/4) * Ur + -5873
Problem 2 Ur+1 = 1.1+0.02cos(2*pi*r/3.99) * Ur + -5873
Problem 3 Ur+1 = 1.1+0.02cos(2*pi*r/3.9) * Ur + -5873
Problem 4 Ur+1 = ---- * Ur + -5873

	Problem 1	Problem 2	Problem 3
U0	50000	50000	50000
U1	50127	50127	50127
U2	49266.7	49262.75318	49226.33178
U3	47335.036	47330.80397	47294.63084
U4	46195.5396	46202.06412	46265.10868
U5	45866.00435	45873.19724	45931.93931
U6	44579.60479	44569.45862	44468.38188
U7	42272.97317	42262.26398	42178.69583
U8	40627.27049	40638.78055	40758.26241
U9	39629.54295	39642.03115	39734.3026
U10	37719.49724	37705.14861	37552.9333