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1. (a) $U_{n+1} = 1.02U_n - 7000$

$U_0 = 60,000$

$U_1 = 1.02 \times 60,000 - 7000 = 54,200$

$U_2 = 48284$

$U_3 = 42249.68$

$U_4 = 36094.6736$

$U_5 = 29816.56707$

$U_6 = 23412.89841$

$U_7 = 16881.15638$

$U_8 = 10218.779553$

$U_9 = 3423.1551$

$U_{10} = -3508.381798$

Loan is paid off after 10 years
(but values would continue into the negative)

(b)

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1 (c) $U_{n+1} = 1.15 U_n - 7000$

$U_0 = 60,000$

$U_1 = 1.15 \times 60,000 - 7000 = 62000$

$U_2 = 64300$

$U_3 = 66945$

$U_4 = 69986.75$

$U_5 = 73484.7625$

$U_6 = 77507.47688$

$U_7 = 82133.59841$

$U_8 = 87453.63817$

$U_9 = 93571.6839$

$U_{10} = 100607.4365$

$U_{11} = 108698.552$

$U_{12} = 118003.3348$

$U_{13} = 128703.835$