RFM Loan Exploration

Initial Scenario
Taking a loan of $80,000 from a bank offered at 3.6% p.a. (compounded monthly). To be paid off over 10 years.

Question 1
What is the monthly repayment for this loan?

Question 2
Express the life of this loan as a recurrence relation.

Question 3
Use this recurrence relation to find the loan balance after the first six months of repayments.

Question 4
For the first six months, calculate the:

a. Total Interest paid
b. Principal reduction
c. Percentage of the repayments that pay interest

Question 5
What will be the final payment?

Question 6
How will the total time to repay the loan be affected by the following variations:

a. Paying an extra $100/month
b. Paying half of $800 each fortnight
c. An interest rate hike from 3.6% to 7.2%?