

Suppose you purchase a home for \$300,000. You make a 10% down payment and finance the rest with a 30-year mortgage at 6% compounded monthly, to be paid off in equal monthly payments.

1. What is the amount of the loan?
2. Use the TVM Solver to determine the amount of each monthly payment.

N =
I% =
PV =
PMT =
FV =
P/Y =
C/Y =
PMT: END

3. Fill in the first 4 months of the following *Amortization Schedule* for the loan.

Payment Number	Payment	Interest	Unpaid Balance Reduction	Unpaid Balance
0				
1				
2				
3				
4				

4. How much money has been paid in total during the first four months of the loan?
5. How much interest was paid during the first four months of the loan?



6. If you own the house for 30 years and pay off the entire mortgage,
- (a) How much money in total will you pay over the 30-year period?

- (b) How much of that total is interest?

7. Suppose that after owning the home for 10 years, you sell the house. What is the *unpaid balance* on the loan at that time?

Method I: The *unpaid balance* after 10 years is the amount of the future value remaining after 120 payments. To find it, use the TVM Solver with the original present value, $N = 120$, and find the future value.

N =
I% =
PV =
PMT =
FV =
P/Y =
C/Y =
PMT: END

Method II: The unpaid balance after 10 years or 120 payments is the amount of the loan that can be paid off with the remaining 240 monthly payments (20 years remaining on the loan). This is equivalent to the present value of an annuity based on payments equal to the amount of each monthly payment for the remaining time on the loan. To find it, use the TVM Solver with $N = 240$, $FV = 0$ and find the present value.

N =
I% =
PV =
PMT =
FV =
P/Y =
C/Y =
PMT: END

8. If you sell your house for \$598,000, find your *equity* in the home at the time of the sale.
 Note: *Equity* = (current net market value) – (unpaid loan balance)