

Day 8: Mortgages

Mortgage:

A long-term loan paid off over a period of time called an amortization period. Due to its length, the terms of a mortgage are periodically renegotiated.

Mortgage lenders often require the borrower to demonstrate an outstanding credit history and show decent earnings. Also, the borrower is often expected to front as much as 25% of the cost of the house before purchase.

Example 1

Kim decides to purchase a home and requires a mortgage of \$105,000. The bank approves a mortgage, amortized over 25 years, with a three year term of 7.75% interest.

Determine the monthly mortgage payments,

a) using the TVM Solver.

```

N=300
I%=7.75
PV=105000
PMT=793.09520...
FV=0
P/Y=12
C/Y=12
PMT:  END  BEGIN
  
```

N must be the total # of months.

$$793.10 \times 300$$

$$\underline{\$237,930}$$

b) using the amortization table on pg. 76.

$$7.55 \times \frac{105,000}{1000}$$

$$\underline{\$792.75}$$

Example 2

The Jones have just assumed a mortgage of \$95,000 amortized over 10 years at 8.5% interest.

a. Determine the monthly mortgage payment.

```

N=120
I%=8.5
PV=95000
PMT=1177.8640...
FV=0
P/Y=12
C/Y=12
PMT: [ ] BEGIN

```

b. Assume that the terms of the mortgage stay the same. Determine the total cost of the mortgage at the end of 10 years.

$$1177.86 \times 120 = 141,343.20$$

Recalculate the Jones mortgage in example 2 with an amortization period of 15 years. How do the two total costs compare.

a. Monthly payment

$$\underline{\$935.50}$$

b. Total payment

$$\underline{935.50 \times 180} = 168,390$$

Pg. 72
5a, 7-9, 11