

# Amortization

## Tax

### Discussion:

You are allowed to deduct the total interest you pay on your home loan from your income. This lowers your adjusted gross income so that you owe the government less taxes. Most lending agencies give you a report at the end of a tax year that gives you the total amount of interest that can be deducted from your income on your IRS tax forms. In this activity you will learn how to use the Casio fx-9750G Plus to calculate the deductible interest on a home loan and some applications.

### Using the fx-9750G Plus calculator:

#### Loan parameters:

Principal value of credit debt: \$150,000  
Payment amount: \$997.95  
Payback period: 30 years  
Interest rate: 7%  
Compounding: Monthly

#### Enter the parameters:

- Press the **AC/ON** button, the **MENU** key, and select **In** for TVM.
- Press **F4** for Amortization.
- Enter in the parameters:
  - P1: first installment, type **1 EXE**.
  - P2: second installment, type payment **360 EXE**.
  - n: total number of payments, type **360 EXE**.
  - I%: percent rate, type **7 EXE**.
  - PV: principal value, type **150000 EXE**.
  - PMT: payment amount, type **[(-)]997.95 EXE**.
  - FV: future value, type **0 EXE**.
  - P/Y: payments per year, type **12 EXE**.
  - C/Y: compounds per year, type **12 EXE**.

#### Find the total interest paid during the first year of the loan:

- Set the payment calculation type:
  - Press **SHIFT MENU (SET UP)**.
  - For Payment press **F2** for End. (This means you make your payment at the end of the month).
  - Press **EXIT**.
- In P1 type **1 EXE**.
- In P2 type **12 EXE**.

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Financial(1/2)
F1:Simple Interest
F2:Compound Interest
F3:Cash Flow
F4:Amortization
F5:Conversion
F6:Next Page
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SMPLCMPT|CASH|AMT|CNUT|D|
Amortization :End
P1=1
P2=360
n =360
I% =7
PV =150000
PMT=-997.9537428 ↓
-----
BAL|INT|PRN|EINT|EPRN|CMPD|
Amortization :End
I% =7 ↑
PV =150000
PMT=-997.95
FV =0
P/Y=12
C/Y=12
-----
BAL|INT|PRN|EINT|EPRN|CMPD|
```

- Press **F4** for  $\Sigma$ INT.
- The answer will appear on the screen.
- Press **EXIT** to return to the previous screen.

Amortization :End  
 $\Sigma$ IN=-10451.73164

REPT                    COMP                    GRPH

**Practice Problems:**

Buying a house:

Loan Parameters: \$135,000 principal, 7.5% APR, 30 year payback period,  
 \$943.94 payment monthly, monthly compounding.

Find the following:

1. The amount of interest paid during the first year of payments.
2. The amount of interest paid during the fifth year of payments.
3. The amount of interest paid in the last year of payments.

**Application Problem:**

If you bought a house and have been paying on the loan for a total of 3 years and 3 months when the tax year ended. Use the following parameters and answer the questions below:

Principal value of credit debt: \$160,000  
 Payment amount: \$1,011.31  
 Payback period: 30 years  
 Interest rate: 6.5%  
 Compounding: Monthly

1. How much interest can you deduct for payments made in the last year?
2. You are in a 28% tax bracket (meaning you pay 28% of your adjusted gross income after deductions). Your income without the loan deduction is \$60,000 this year. How much is your adjusted gross income (income minus deductions)?
3. How much tax do you owe to the IRS?
4. Your employer withheld \$12,500 in taxes from your paychecks over the year. Do you owe or get a refund this year?
5. How much would you owe if you rented a house and had no deductions from your income?