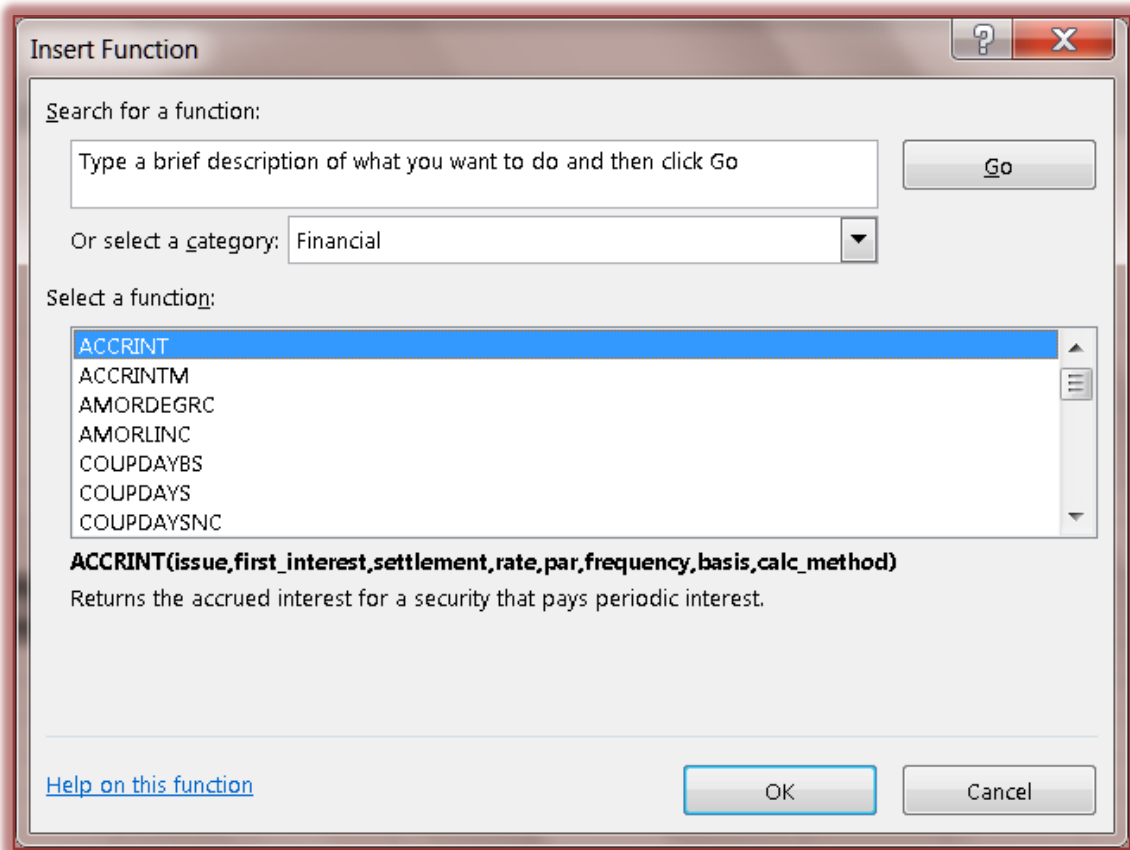


PMT Functions

The PMT function calculates the periodic payment of a loan assuming a constant interest rate and constant payments over the life of the loan. It is based on three factors; the amount of the loan (principal), interest rate, and length of the loan (term).

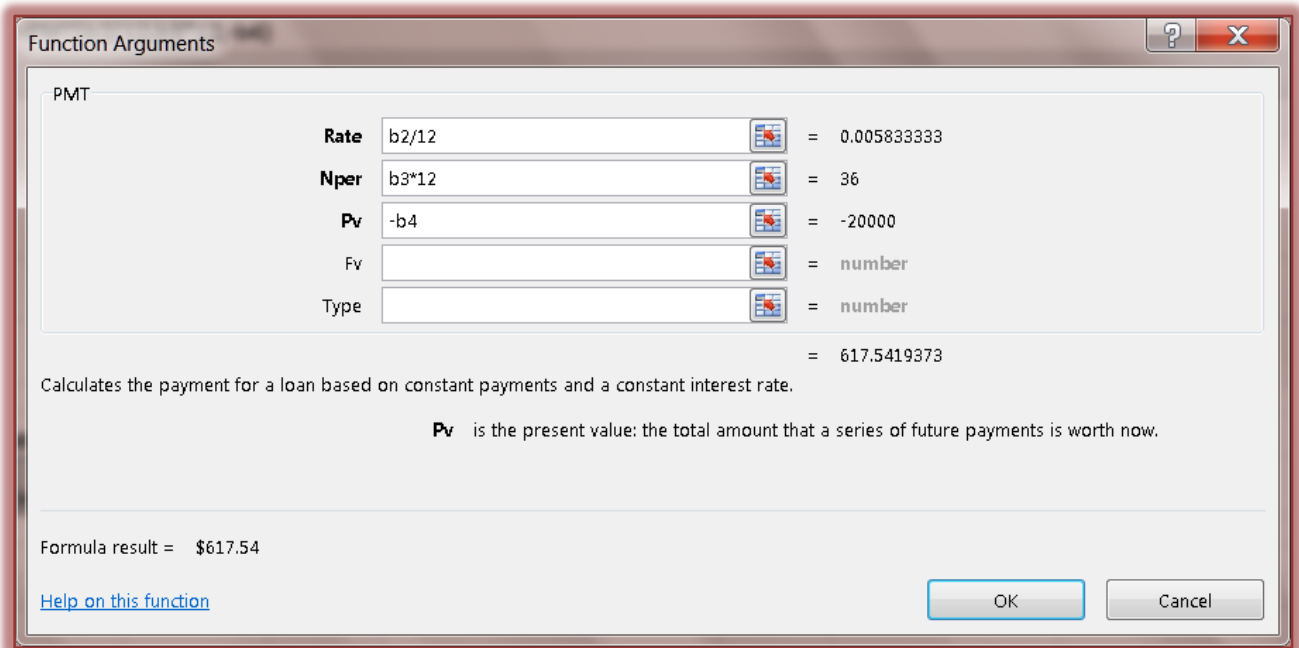
CALCULATE THE LOAN PAYMENT

- ✦ Open the document **Loan Analysis** from the area where the files that were downloaded from the Excel Training Web page were stored.
- ✦ In cell **B2**, input 7%.
- ✦ In cell **B3** input the number **three (3)**.
- ✦ In cell **B4** input **20000**. DO NOT include the comma.
- ✦ Click **B5**, if necessary.
- ✦ Click the **Insert Function** button next to the **Formula Bar** (see illustration at right).
- ✦ The **Insert Function** dialog box will appear (see illustration below).



- ✦ Click the drop-down arrow for the **Or select a category** box and click the **Financial** category.
- ✦ Scroll down and then click the **PMT** function. These items appear in alphabetical order.
- ✦ Click **OK** to open the **Function Arguments** dialog box (see illustration top of next page).
- ✦ In the **Rate** box, input **B2/12** (twelve).
 - ★ This will look at the interest rate in B2 and divide it by 12.
 - ★ Because the rate is an annual rate, it needs to be divided by 12 to find the monthly rate.
- ✦ In the **Nper** (number of periods) box, input **B3*12** (twelve).
 - ★ Because this entry is expressed in years, you need to multiply by the number of months in a year to find the monthly rate.

- ✦ In the **Pv** (present value) text box, input **-B4**.
 - ★ Putting a negative sign into the formula will display the number as a positive number, rather than a negative number.



- ✦ When the information is input into the different boxes, the calculations will display in the **Function Arguments** dialog box (see illustration above).
- ✦ The results of the function will appear at the bottom of the five boxes.
- ✦ Click **OK**.
- ✦ The amount **617.54** should appear in cell **B5**.

DEVELOP THE LOAN AMORTIZATION SCHEDULE

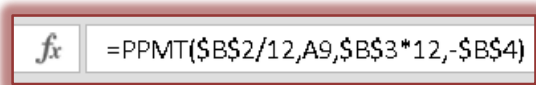
This schedule is a report that shows the detail of each loan payment. It shows how much of each month's payment is applied to the repayment of the principal and how much is applied toward the interest. It also shows the ending loan balance after each loan payment.

- ✦ Type the number **one (1)** in cell **A9** and the number **two (2)** in cell **A10**.
- ✦ Select **A9:A10** and use the **AutoFill** feature to complete the sequential series by copying down to cell **A44**.
- ✦ The numbers **1** through **36** should appear in the column from cell **A9** through **A44**.
- ✦ In cell **B9**, input **=B4** to enter the beginning balance for period 1.

CALCULATE THE PRINCIPAL FOR EACH PERIOD

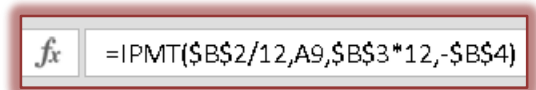
- ✦ Click in cell **C9** in the worksheet.
- ✦ Click the **Insert Function** button next to the **Formula Bar**.
- ✦ The **Insert Function** dialog box will appear (see illustration on previous page).
- ✦ If necessary, click the drop-down arrow for the **Or select a category** box and click the **Financial** category.
- ✦ Scroll down and then double-click the **PPMT** function to open the **Function Arguments** dialog box (see illustration above).
- ✦ In the **Rate** text box, input **=\$B\$2/12** (twelve).
 - ★ This will look at the Interest Rate in cell B2 and divide it by 12.

- ★ Because this is an annual rate, it needs to be divided by 12 to find the monthly rate.
- ★ The dollar signs make the cell reference an absolute reference.
- ★ This means that the cell reference will not change when the information is copied to other cells in the worksheet.
- ✚ In the **Per** (current period) text box, type **A9**.
 - ★ This will use the numbers that were input into column A. The numbers will change as the material is copied to the additional rows.
 - ★ This cell reference needs to change when it is copied to other cells. Therefore, dollar signs are not placed next to the cell reference.
 - ★ This is known as a relative cell reference, because it changes relative to the cell that it is being copied to.
- ✚ In the **Nper** (number of periods) text box, type **\$B\$3*12** to determine the number of monthly payments.
 - ★ This number is expressed in years.
 - ★ To find the number of monthly periods, you must multiply by 12.
 - ★ This is an absolute cell reference that means the reference will not change when it is copied to other cells.
- ✚ In the **Pv** (present value) text box, input **-\$B\$4**.
 - ★ This makes the cell reference an absolute reference.
 - ★ This means that the cell reference will not change when the information is copied to other cells in the worksheet.
- ✚ Click the **OK** button.
- ✚ The amount in this cell should be **\$500.88**.
- ✚ The **Function** should appear in the **Formula Bar** as shown in the illustration below.



CALCULATE THE INTEREST PAID IN EACH PERIOD

- ✚ Click cell **D9** and then click the **Insert Function** button next to the **Formula Bar**.
- ✚ The **Insert Function** dialog box will appear.
- ✚ Click the drop-down arrow for the **Or select a category** box and click the **Financial** category, if necessary.
- ✚ Double-click the **IPMT** function to open the **Function Arguments** dialog box.
- ✚ In the **Rate** text box, input **\$B\$2/12**.
- ✚ In the **Per** text box, input **A9**.
- ✚ In the **Nper** text box, input **\$B\$3*12**.
- ✚ In the **Pv** text box, input **-\$B\$4** and then click **OK**.
- ✚ The result of this function should be **\$116.67**.
- ✚ The **Function** should appear in the **Formula Bar** as shown in the illustration below.



COMPLETE THE AMORTIZATION SCHEDULE

- ✚ In cell **E9**, input **=B9-C9**. This will compute the ending balance.

- ✦ The result of this formula should be **\$19,499.12**.
- ✦ For the remaining payment periods, the ending balance for the current month is also the beginning balance for the next month.
- ✦ In cell **B10**, input **=E9**. This will insert the balance from the previous month.
- ✦ Select **C9:E9**, then click and drag the **Fill Handle** to drag the functions down one row.
- ✦ Select the range **B10:E10** and drag the information down to row **44**.
 - ★ The Ending Balance for each month should decrease.
 - ★ The Repayment of Principal should increase for each month.
 - ★ The Interest Rate should decrease for each month.
 - ★ The Ending Balance should be zero at the end of the 36 months.
- ✦ Change the input values (Interest Rate, Term, and Loan amount) to see the effect on both the Monthly Payment and the Amortization Schedule.