More Functions and Formulas

Using Financial Functions (PMT)

The PMT function is a very valuable function if you work with real estate, investments, or are considering taking out a loan. The PMT function calculates the payment for a loan based on periodic payments and a constant interest rate. For example, say you want to take out a $10,000 car loan at 8% interest and will pay the loan off in four years. You can use the PMT function to calculate that the monthly payments for such a loan would be $244.13.

You can also use the PMT function to determine payments to annuities or investments. For example, if you want to save $50,000 in 20 years by saving the same amount each month, you can use PMT to determine how much you must save.

1. Click the **Insert Function** button on the Formula bar.

   The Insert Function dialog box appears.

2. Click the **Or select a category** list arrow and select **Financial**.

   Functions that fall under this category are shown in the Select a function box.

Exercise

- **Exercise File:** Functions.xlsx, PMT worksheet
- **Exercise:** In cell D4, create a PMT function that uses these arguments:
  Rate: C4/12
  Nper: B4*12
  Pv: A4

  The result is a negative number: Add a – (negative) symbol between the = and PMT in the Formula bar so the value is positive.

  Copy the PMT function to D5:D6.

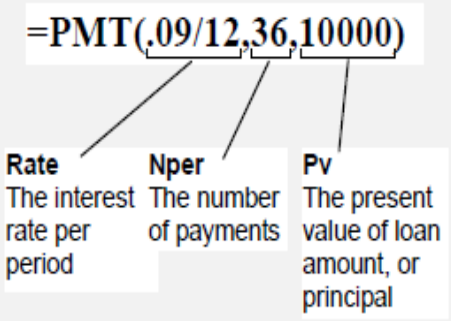

Figure 7-19: The syntax for the PMT Function.

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3. Select **PMT** in the Select a function box and click **OK**.

   The Function Arguments dialog box appears.

4. Enter the required arguments for the PMT function and click **OK**.

   The results of the function are displayed in the selected cell.

Tip: Remember, you can also create cell references by clicking the cell or cell range you want to reference. Click the Collapse Dialog button to collapse the function palette and select the cell range if the Function Arguments dialog box is in the way.

Other Ways to Use the PMT Function in a Formula:
Write the formula using the syntax PMT(rate,nper,pv)

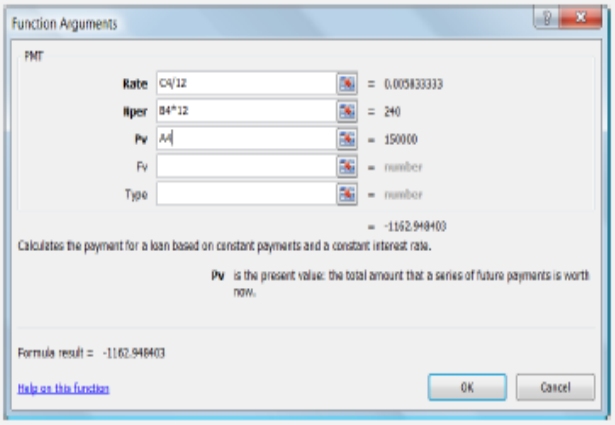

Figure 7-20: The Function Arguments dialog box.

	A	B	C	D
1	**Mortgage Payment Table**			
2				
3	Loan Amount	Loan Length (in years)	Interest Rate	Monthly Payment
4	$ 150,000	20	7.0%	$1,162.95
5	$ 150,000	20	7.5%	$1,208.39
6	$ 150,000	30	7.5%	$1,048.82

Figure 7-21: The results of the PMT function.

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✍️ Short Answer Question

No.	Question	Answer
1	Define PMT function.	It calculates the periodic loan payment.
2	Why must rate and nper match?	To ensure correct calculation (same time unit).
3	Give one real-life use of PMT.	Loan or mortgage calculation.
4	What is optional in PMT?	fv and type
5	What is fv usually set to?	0

No.	Question	Options	Answer
1	What does the PMT function calculate?	A) Interest rate B) Average C) Loan payment D) Sum	C
2	What is the meaning of "rate" in PMT?	A) Interest per period B) Loan amount C) Total time D) Balance	A
3	What does "nper" represent?	A) Interest B) Tax C) Loan value D) Number of payments	D
4	What is "pv" in PMT?	A) Future value B) Present value (loan) C) Payment D) Profit	B
5	If payments are monthly, what should we do with the annual rate?	A) Multiply by 12 B) Divide by 12 C) Ignore it D) Add 12	B
6	Why is the result of PMT sometimes negative?	A) Shows payment outflow B) Error C) Wrong formula D) No reason	A
7	What is the default value of [type]?	A) 1 B) 0 C) 12 D) -1	B
8	What does type = 1 mean?	A) End of period B) No payment C) Beginning of period D) Annual payment	C
9	Write the PMT formula for a $50,000 loan, 5% annual rate, 3 years (monthly).	—	=PMT(5%/12, 3*12, -50000)
10	What happens if pv is entered as negative?	—	Payment result becomes positive

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