TI BAII Plus Financial Calculator

To enter data: Enter the value and then press the gray key where you want to enter the value. You do not need to press ENTER. When ready to enter another value, enter the number and then press the appropriate gray key.

- **N** means the total number of compounding periods. For instance, a five year loan compounded monthly would have \( N = 60 \).
- **I/Y** means “interest per year.” If the problem involves a 6% interest rate, enter **I/Y** as 6. Press the number 6, and then press the I/Y key. (Note that 6% is not entered as .06.)
- **PV** means “present value.”
- **PMT** is the dollar amount of the payment.
  - **PMT** should be entered as a 0 if there is no payment.
  - **PMT** should be entered as a positive value when the account balance is increasing.
  - **PMT** should be entered as a negative value when the account balance is decreasing.
  - The negation key is at the lower right (± / –).
- **FV** means “future value.” Enter all future values as negative numbers. When computing for FV, the result will show as a negative number.

- **P/Y** should be appropriate for each individual problem. **P/Y** means number of “payments per year,” and also the number of “compounding per year.”
  If the problem involves monthly compoundings, set the **P/Y** to 12 by doing the following steps:
  a. 2nd **P/Y**
  b. Type the number 12.
  c. Press the ENTER key at the top (not the equal sign at the bottom right).
  d. 2nd **QUIT**

- To change from **END** to **BGN** (Begin) mode, do the following steps:
  - 2nd **BGN**
  - 2nd **SET**
  - 2nd **QUIT**
  To change from **BGN** to **END**, do the same steps.

Clearing values: It is not necessary to clear values, prior to the input of values for a new problem. The new input will automatically replace the old data. However, pressing the **CE/C** key clears stored values.

To compute the answer: When all the data has been entered, compute the unknown by pressing the **CPT** (compute) key and then the key for the desired information.

To store and retrieve values:
- Display the value that you want to store, on the screen of the calculator.
- Press the STO key, and then immediately press any digit from 0 to 9. (There are 10 storage areas.)
- To retrieve the value, press the RCL key and then the specific digit from 0 to 9.

To clear memory: Clear all memories at once by pressing 2nd **MEM**, and then 2nd **CLR Work**.

To set the number of decimal places:
- 2nd **FORMAT** (above the decimal point)
- Type 9 for the maximum number of decimal places; type 2 for 2 decimal places; etc.
- Press ENTER (next to the CPT button at the top left)
- 2nd **QUIT** (above CPT).
The following examples are from Steve Wilson’s Business Math Using Percents textbook.

1. Dawn inherits $5000 from her Uncle Jim. She deposits it into a savings account earning 6% interest compounded monthly. What will be the account balance in 20 years?

   P/Y should be set as 12.
   N = 20 x 12
   I/Y = 6
   PV = 5000
   PMT = 0
   FV = ?

   The result for FV should be $16,551.02. It will show on the screen as a negative number.

2. Frank wants to have one million dollars at the end of 30 years. How much does he need to deposit today in a savings account earning 7.25% interest compounded quarterly in order to meet his goal?

   P/Y should be set as 4.
   N = 30 x 4
   I/Y = 7.25
   PV = ?
   PMT = 0
   FV = -100000

   The result for PV should be $115,842.47.

3. How long will it take a $5000 deposit to grow to $8000 when interest is 9% compounded monthly?

   P/Y should be set as 12.
   N = ?
   I/Y = 9
   PV = 5000
   PMT = 0
   FV = -8000.

   The result for N should be 62.9 months. Divide 62.9 by 12 to get 5.24 years.

4. A deposit of $1200 grew to $3300 over 20 years, as interest was compounded semiannually. What was the annual interest rate (compounded semiannually) on this investment?

   P/Y should be set as 2.
   N = 20 x 2
   I/Y = ?
   PV = 1200
   PMT = 0
   FV = -3300

   The result for I/Y should be 5.12%.

5. Beatrice deposits $75 at the end of each month into an account earning 7.75% compounded monthly. How much will the account hold after eight years?

   P/Y should be set as 12.
   N = 8 x 12
   I/Y = 7.75
   PV = 0
   PMT = 75
   END should be chosen from the END/BEG option.
   FV = ?

   The result for FV should be $9931.66. It will show on the screen as a negative number.
6. Frances wants to have a $12,000 down payment for a house in three years. How much would she need to deposit at the beginning of each month in an account earning 7% compounded monthly, in order to meet her goal? 
P/Y should be set as 12. 
N = 3 x 12 
I/Y = 7 
PV = 0 
PMT = ? 
BEG should be chosen from the END/BEG option. 
FV = -12000. 
The result for PMT should be $298.78.

7. Ingrid’s car loan stipulates payments of $299 per month for 60 months. The car was originally priced at $13,500. What is the Annual Percentage Rate? 
P/Y should be set as 12. 
N = 60 
I/Y = ? 
PV = 13500 
PMT = -299 
END from the END/BEG option. 
FV = 0 
The result for I/Y should be 11.81%.

8. Victoria borrowed $4,000 at 8.5% interest, and is paying back $40 each month. How long will it take Victoria to pay off the balance? 
Set P/Y as 12 
N = ? 
I/Y = 8.5 
PV = 4000 
PMT = -40 
END should be chosen from the END/BEG option. 
FV = 0. 
The result for N should be 174.6 months, which should be divided by 12 to get 14 yrs 7 months.

9. Karl and Karen take out a $108,000 mortgage to purchase their new home. The interest rate is 7.12% and the term is 30 years. What is the monthly payment? 
P/Y should be set as 12. 
N = 12 x 30 
I/Y = 7.12 
PV = 108,000 
PMT = ? 
END should be chosen from the END/BEG option. 
FV = 0 
The result for PMT should be $727.25. This number will show on the screen as a negative number.
10. Alicia earns $25,000 per year. She takes 7.65% of her gross monthly salary and invests it at the end of each month into an account earning 5.25% compounded monthly. After 45 years, she retires, and makes monthly withdrawals at the rate of $25,000 per year. How long can her withdrawals last?

**Part 1** is to find the future value of her savings:

Find the amount of the contribution: \( \frac{25,000 \times 0.0765}{12} = \$159.38 \)

P/Y should be set as 12.

N = 45 x 12

I/Y = 5.25

PV = 0

PMT = 159.38

END from the END/BEG option.

FV = ?

The result for FV should be \$348,373.40. This will show as a negative number.

**Part 2** of the problem is to find how long her money will last her:

P/Y should be set as 12.

N = ?

I/Y = 5.25

PV = 348373.40

PMT = -25000/12

Choose END from the END/BEG option.

FV = 0

The result for N should be 301.28 months. Divide by 12 to get 25.1 years.

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