

## How To Use TI BAI Calculator

### Changing decimal points:

2<sup>nd</sup> Format (the number of decimal you would like) Enter 2<sup>nd</sup> Quit

### Changing the # of payments per period (year):

2<sup>nd</sup> P/Y (the # of payments per year desired) Enter 2<sup>nd</sup> Quit

### Description of function keys:

<u>N</u> :	Number of periods
<u>I/Y</u> :	Interest rate per period
<u>PV</u> :	Present value
<u>PMT</u> :	Payment per period
<u>FV</u> :	Future value

### Simple MTV

Example: Compute the future value of \$2,250 at a 17 percent annual rate for 30 years.

Input	Function key	
-2,250	<u>PV</u>	You can input +2,250, but in this case your FV will be negative.
30	<u>N</u>	30 years
17.0	<u>I/P</u>	Annual rate
	<u>CPT</u> <u>FV</u>	This will give you the FV that you are looking for.

The screen will show 249,895.46, and this is the FV.

**Very Important: PLEASE CLEAR YOUR TVM REGISTERS EVERY TIME YOU COMPUTE TVM!! THIS CAN BE DONE BY 2<sup>ND</sup> CLR TVM.**

### Finding an Unknown Interest Rate

Example: Assume that the total cost of a college education will be \$75,000 when your child enters college in 18 years. You presently have \$7,000 to invest. What rate of interest must you earn on your investment to cover the cost of your child's college education?

Input	Function Key	
-7,000	<u>PV</u>	This is your investment (cash outflow)
18	<u>N</u>	18 years
75,000	<u>FV</u>	This is how much you would receive in 18 years (cash inflow)
	<u>CPT</u> <u>I/Y</u>	This will compute the interest rate.

The screen will show 14.08.

\*you can change the sign of PV and FV, but make sure that one of them is negative and the other is positive.

### Annuity

When we perform annuity related problems on TI BAI, you must make sure that your TI BAI has a right setting regarding the timing of the payment.

For ordinal annuity – the setting must be END, and there is no display on your TI BAI screen.

For annuity due – you need to use BGN setting, and your there should be BGN sing on your screen.

To change the setting:

2<sup>nd</sup> BGN 2<sup>nd</sup> SET 2<sup>nd</sup> QUIT This will change your setting.

Example: Betty's Bank offers you a \$20,000, seven-year term loan at 11% annual rate. What will your annual loan payment be?

Input	Function Key	
\$20,000	<u>PV</u>	This is how much you are getting from the loan (cash inflow).
7	<u>N</u>	7 years
11.00	<u>I/Y</u>	11% annual rate
	<u>CPT</u> <u>PMT</u>	This will compute the payment.

The screen will show -4,244.31.

### Interest Rate Conversion

Example: Find the EAR corresponding to a 7% APR, compounded quarterly.

Input	Function Key	
	<u>2<sup>nd</sup></u> <u>I Conv</u>	The screen show NOM=.....
7.00	<u>ENTER</u> <u>↓</u> <u>↓</u>	After you press <u>↓</u> twice, you will see C/Y on the screen.
4.00	<u>ENTER</u> <u>↑</u>	After this step, you will see EFC= on the screen.
	<u>CPT</u>	This will compute the EAR.

The screen shows 7.19.

### Simple Bond Pricing

Example: Mullineaux Co. issued 11-year bonds 1 year ago at a coupon rate of 8.25%. The bonds make semiannual payments. If the YTM on these bonds is 7.10%, what is the current price?

Input	Function Key	
41.25	<u>PMT</u>	Semiannual coupon payment
1,000	<u>FV</u>	Face value
20.00	<u>N</u>	The time period left (10 years *2)
3.55	<u>I/Y</u>	YTM/2
	<u>CPT</u> <u>PV</u>	This will compute the bond's current price.

The screen shows -1081.35.

### Simple Bond YTM

Example: Vasicek Co. has 12.5% coupon bonds on the market with 8 years left to maturity. The bonds make annual payments. If one of these bonds currently sells for \$1,145.68, what is its YTM?

Input	Function Key	
-1,145.68	<u>PV</u>	Current price of the bond
125.00	<u>PMT</u>	The annual coupon payment
1,000	<u>FV</u>	Face value
8	<u>N</u>	Time to maturity
	<u>CPT</u> <u>I/Y</u>	This will compute the YTM.

The screen shows 9.79.

### Cash Flow Analysis

Example: What are the IRR and NPV of the following set of cash flows? Assume a discount rate of 10%.

Year	Cash Flow
0	-\$1,300
1	400
2	300
3	1,200

Input	Function Key	
	<u>CF</u> <u>2<sup>nd</sup></u> <u>CLR Work</u>	This will clear previous work. This is very important!!
-1,300	<u>ENTER</u> <u>↓</u>	

400	<u>ENTER</u> ↓	
1	<u>ENTER</u> ↓	
300	<u>ENTER</u> ↓	
1	<u>ENTER</u> ↓	
1,200	<u>ENTER</u> ↓	
1	<u>ENTER</u> ↓	
	<u>IRR</u> <u>CPT</u>	This will compute the IRR, and should be 17.40.
	<u>NPV</u>	
10.00	<u>ENTER</u>	The discount rate
	↓ <u>CPT</u>	This will compute the NPV, and should be 213.15.

**More detailed instruction can be found in our textbook in Appendix D on page 517-519.**