FINANCIAL MANAGEMENT
MBA 440
Prof. Dalia Marciukaityte

Using Financial Calculator

These instructions are for the calculator I recommended in the syllabus (Texas Instruments BA II PLUS). If you have a different financial calculator and do not know how to use it, you will need to find the instructions for it (usually it is easy to find them online). Even for a different calculator, look at these instructions to get an idea what you need learn.

There is only one main formula in the calculations of time value of money (other formulas you might have seen are derived from it):

$FV = PV(1+i)^n$

If you get money today (PV) you can invest it at a rate of return (i) and after n years, you will have FV. The same amount of money is worth more today, because we can invest it and have more in the future. This is what your calculator will do.

Before you start calculations of your calculator, you should check settings on it. There is more than one way to use this calculator. I will show only one way. If you know a different way very well, you can keep using it.

On the left side I will write exactly what you need to press and on the right side what you should see on the display. Remember that after you press 2ND (first button on the second row) your calculator will do what is written above the button, not on it. I will write the values above the button in brackets (e.g., [FORMAT]).

To set the number of decimal places ([FORMAT] is on the last row; ENTER and [QUIT] are on the first row):

Press	**Display**
2ND [FORMAT] 9 ENTER	DEC = 9.
2ND [QUIT]	0.

To set both P/Y (payments per year) and C/Y (compounding per year) to 1:

Press	**Display**
2ND [P/Y] 1 ENTER	P/Y = 1.
↓ 1 ENTER	C/Y = 1.
2ND [QUIT]	0.

We will always keep these setting in this class.

For the time value of money calculations, we will use buttons on the third row:

N is the number of years (if the problem is not on annual basis (e.g., you make monthly payments on your mortgage) then N is the number of periods (e.g., months) and other variables are not per year but per the same period).
I/Y is interest rate (or rate of return) per year (period).
PV is the present value.
PMT is the payment per year (period) (annuity).
FV is the future value.

To estimate how much money you will have in 5 years if you invest $1 at 7%:

Press	**Display**
2ND [CLR TVM]	0.
1 +|– PV	PV = –1.
5 N	N = 5.
7 I/Y	I/Y = 7.
CPT FV	FV = 1.402551731

Always do 2ND [CLR TVM] (last button on the third row) when you start (it is not always necessary, but it is easy to forget when you need it if you will not develop a habit to do it always).

I entered PV as a negative number (+|– is on the last row) because it is a negative cash flow for me (I invest). When I receive money, I enter it as a positive number and the calculator shows a positive number (FV in this example).

Always enter rate as 7 not as 0.07 for 7%.

It does not matter in which order you enter the variables you know (you could have entered I/Y first). Just enter the number first and then what it is. Once you enter all variables, press CPT (on the first row) and then what you need to compute.

To estimate how much money you need to deposit in a bank today at 2% interest rate so you can withdraw $50,000 at the end of each year for the next ten years (ends of years 1 through 10):

Press	**Display**
2ND [CLR TVM]	0.
50000 +|– PV	PV = –50,000.
10 N	N = 10.
2 I/Y	I/Y = 27.
CPT PMT	PMT = 5,566.326393

In this class, I will always set up annuities for the end of year (or period). Beginning of one year is the end of another so we always can work with the end of year numbers in annuities. For these calculations to work, when you enter your numbers, annuity should always start at the end of year 1 (I will show later what to do when this is not the case in your problem).

PV is at the end of year 0.

FV is at the end of year N.

If you have a perpetuity (annuity that lasts forever), for N enter the largest number your calculator can display (e.g., 9999999999).