Solving Compound Interest Problems on the TI-83 Graphing Calculator

1. You have $10,000 to invest. You have found a bank that will pay you 4.5% compounded monthly. What will your investment be worth after each time period?

   What variable are you solving for? What variable are you changing?

	10 years	20 years	30 years	40 years
N	10	20	30	40
I%	4.5	4.5	4.5	4.5
PV	-10 000	-10 000	-10 000	-10 000
PMT	0	0	0	0
* FV	15,689.93	24,554.66	38,476.96	60,293.15
P/Y	1	1	1	1
C/Y	12	12	12	12

2. You are investing $1500 that you want to grow to $2500 in 5 years. What interest rate do you need (to two decimal places) if interest is compounded by each schedule?

   What variable are you solving for? What variable are you changing?

	Daily	Weekly	Semi-Monthly	Semi-Annually
N	5	5	5	5
I%	10.22%	10.23%	10.24%	10.48%
PV	-1500	-1500	-1500	-1500
PMT	0	0	0	0
FV	2500	2500	2500	2500
P/Y	1	1	1	1
C/Y	365	52	24	2

3. How long would it take a $25,000 investment to double if it is compounded weekly at each interest rate below?

C/Y = 52

→ 25000 × 2 = 50000

What variable are you solving for? What variable are you changing?

N (time) I%

	0.5%	2.5%	5.5%	9%
N	138.6 yrs	27.7 yrs	12.6 yrs	7.7 yrs
I%	0.5%	2.5%	5.5%	9%
PV	-25000	-25000	-25000	-25000
PMT	0	0	0	0
FV	50000	50000		
P/Y	1	1	1	1
C/Y	52	52	52	52

4. You need to have $3,000 to buy a used car. You can invest in a GIC that pays 6.2% compounded bi-weekly. How much do you need to invest now to get your money in each given period of time?

FV I% C/Y = 26

What variable are you solving for? What variable are you changing?

PV N

	6 months $\frac{6}{12}=0.5$	18 months $\frac{18}{12}=1.5$	5 years	7 years
N	0.5	1.5	5	7
I%	6.2	6.2	6.2	6.2
PV	-2908.53	-2733.86	-2201.15	-1944.74
PMT	0	0	0	0
FV	3000	3000	3000	3000
P/Y	1	1	1	1
C/Y	26	26	26	26