ALGEBRA II ACTIVITY 17:
COMPOUND INTEREST
TIalgebra.com

ACTIVITY OVERVIEW: In this activity we will • Calculate the future value of investments that earn interest compounded annually, quarterly, or monthly • Calculate the final value of the investments • Calculate the amount to be invested that will have a specified future value	APPLICATIONS 1:Finance… 2:ALG1CH5 3:ALG1PRT1 4:AreaForm 5:CBL/CBR 6:CSheetDe 7↓CSheetEs
One of several uses of the Time, Value, Money Solver in the Finance APP is to compute interest on your investments. Press APPS. No matter how many APPS you have, the first one will be **1:Finance**. Press 1. The first option listed is **1: TVM Solver…**. Press 1.	CALC VARS 1:TVM Solver… 2:tvm_Pmt 3:tvm_I% 4:tvm_PV 5:tvm_N 6:tvm_FV 7↓npv(
Consider this: *What is the future value of a $20,000 Certificate of Deposit invested for 5 years at 6% compounded annually?* Enter N=5, I%=6, PV= -20000, PMT=0, P/Y=1 and C/Y=1. Notice that the money invested, PV (principal value), is entered as a negative number because case outflows are considered negative. Place the cursor next to FV (future value).	N=5 I%=6 PV=-20000 PMT=0 FV=■ P/Y=1 C/Y=1 PMT:END BEGIN
Press ALPHA ENTER. The future value of the certificate of deposit is $26,764.51.	N=5 I%=6 PV=-20000 PMT=0 •FV=26764.51155 P/Y=1 C/Y=1 PMT:END BEGIN
Consider this: *Tracy invested $2,000 at 6% compounded quarterly for 5 years. What will his investment be worth in 5 years?* Enter N=4*5, I%=6, PV= -2000, PMT=0, P/Y=4 and C/Y=4. Notice that the calculator will change 4*5 to 20. Place the cursor next to FV (future value).	N=20 I%=6 PV=-2000 PMT=0 FV=■ P/Y=4 C/Y=4 PMT:END BEGIN

| Press [ALPHA][ENTER].  The future value of the investment is $2,693.71. | ```
N=20
I%=6
PV=-2000
PMT=0
■FV=2693.710013
P/Y=4
C/Y=4
PMT:█NG BEGIN
``` |
| If N is entered in years (5) instead of payment periods (20), then P/Y should be changed to 1 and C/Y stays 4.  This give the same result of $2,693.71. | ```
N=5
I%=6
PV=-2000
PMT=0
■FV=2693.710013
P/Y=1
C/Y=4
PMT:█NG BEGIN
``` |
| Consider this: *How much money should you deposit in a savings and loan association paying 6% compounded quarterly in order to have $3,000 in 5 years?*<br><br>Enter all the values except the PV as shown.  Place the cursor next to PV. | ```
N=5
I%=6
PV=■
PMT=0
FV=3000
P/Y=1
C/Y=4
PMT:█NG BEGIN
``` |
| Press [ALPHA][ENTER].  The initial investment should be $2,227.41 (which is negative because it is paid out by the investor). | ```
N=5
I%=6
■PV=-2227.411255
PMT=0
FV=3000
P/Y=1
C/Y=4
PMT:█NG BEGIN
``` |
| Consider this: *Find the future value of $8,000 invested for 6 years at 8% compounded monthly.*<br><br>Enter all the values except the FV as shown.  Place the cursor next to FV. | ```
N=6
I%=8
PV=-8000
PMT=0
FV=■
P/Y=1
C/Y=12
PMT:█NG BEGIN
``` |
| Press [ALPHA][ENTER].  The future value will be $12,908.02.  The value is positive because it is money paid out to the investor. | ```
N=6
I%=8
PV=-8000
PMT=0
■FV=12908.01734
P/Y=1
C/Y=12
PMT:█NG BEGIN
``` |