**TT03 – Financial Calculator Tutorial**

**And Key Time Value of Money Formulas**

November 6, 2007

The purpose of this tutorial is to help students who use the Texas Instruments BAII Plus, HP 17BII, and HP10C calculators understand how to perform the calculations discussed in the TVM Math Formula handout. Note that the key words, to help you understand whether it is present value, future value, or an annuity, are italicized, underlined, and it bold face.

## 1. Future Value (FVIF)

## This is the value of an investment at some point in the future, used for planning and forecasting purposes. A possible question would be: I have $2,500 saved. If my investment earns 10% per year for 20 years, how much will it be worth in 20 years (this indicates future value)? The math formula is:

**FV = PV (1 + i)n** where FV = future value, PV = present value, i=interest rate, n = number of years or FV = $2,500 \* (1 + .10) 20 or $16,818.75

**Using the TI BAII Plus:**

First press [2nd][Quit] to return to standard calculator mode. Then press [2nd][CLR TVM] to clear the TVM worksheet, and [2nd][P/Y] 1 [ENTER][2nd][Quit] to change the payments to 1 payment a year. To change the payments to annual payments, press [2nd][P/Y] 1 [ENTER]2nd][CLR Work].

The following are the keystrokes to solve the problem: 2500 [+/-][PV], 10 [I/Y], 20 [N], [CPT][FV]. Note that with this calculator, you must type the [CPT] or compute key before getting the final value.

**Using the BA 35 Solar:**

First press [2nd][CMR] to clear the memories/registers, and [MODE] to bring you into the finance mode. FIN will appear in the lower left hand of the display. The press [2nd][BGN] until the “Begin” text is no longer in the middle of the display. “Begin” in the display means that the payments are at the beginning of the period. If it is gone, they are at the end of the period. The following are the keystrokes to solve the problem: 2500 [+/-][PV], 10 [%i], 20 [N], [CPT][FV]. Note that with this calculator, you must type the [CPT] or compute key before getting the final value.

**Using the TI-83**

To quit out of your current problem, type [2nd] [QUIT]. Then type [2nd][FINANCE} to go to the Finance mode. The calculator will highlight 1:TVM Solver. Hit [Enter]. There is no nice clear function with the TI-83, you must manually type a 0 in each of the 7 areas to clear the information. To solve the problem just fill in the blanks: 20[V] “down arrow” in the upper right corner, 10[v] for interest rate, [(-)]2500[v] for present value, [v] [v], 0 [v] for payment, 0 [v], 1[v] for payments a year, 1 [v] for coupon per year, [^][^] to future value, then [ALPHA][SOLVE] to get your answer.

**Using the HP 10BII**

Note that the 10BII has two [2nd] keys, the orange [[o]] key and purple [[p]] key. Type [[o]][C ALL] to clear the memories. Then press 1 orange [[o]][P/YR] [[o]][C ALL] to change the payments to annual payments and [[o]][BEG/END to set your payments for the end of the period. If it is in BEGIN mode, you will see a BEGIN in the lower bottom display. The problem then is 2500 [+/-][PV], 10 [I/YR], 20 [N], and then [FV] for the answer.

**Using the HP 12C:**

Note that the 12C has two [2nd] keys, the orange [[o]] key and blue [[b]] key. Type [[o]][CLEAR FIN] to clear the financial registers and [[o]][CLEAR REG] to clear the registers. Then press [[b]] [END] set your payments for the end of the period. The problem then is 2500 [CHS][PV], 10 [i], 20 [n], and then [FV] for the answer.

**Using the HP 17BII:**

First press [EXIT][EXIT] to return to the basic mode. Note that the [2nd] or [[o]] key is the orange key just above the OFF button. Type [[o]][CLEAR DATA] to clear the memories. Then press [FIN][TVM] to go to the TVM menu. Then press [OTHER] 1 [P/YR] [EXIT] to change the payments to annual payments and [OTHER] [END] [EXIT] to set your payments for the end of the period. The problem then is 2500 [+/-][PV], 10 [I%YR], 20 [N], and then [FV] for the answer.

**Using the HP-48 G or GX**

To get into the finance area, type [g] for the green right arrow and 7 for [solve], then the [^][^] arrows until you see the solve finance, and push [Enter]. Now you just enter the information to solve the problem. The default is [END] for cash flows at the period end: 20[enter] for N, 10 [enter] for I, 2500 [+/-][enter] for PV, 0 [enter] for pmt, 1 [enter] for P/Y. Then use the arrow keys to highlight FV, and press [solve].

**Using the Sharp Business/Financial EL-733A**

Note that the [[2ndF]] key is the orange key in the upper left hand area. Type [[2ndF]] [MODE] repeatedly to put the calculator into the financial functions. FIN will appear in the upper right hand of the display. To clear the memory, type [[2ndF]] [CA] to clear the memories. This calculator only does problems assuming payments at the end of the period. The problem then is 2500 [+/-][PV], 10 [i], 20 [n], and then [COMP][FV] for the answer.

## 2. Present Value (PVIF)

## This is the current value, that is, the value in today’s dollars, of a future sum of money or stream of money. A possible question would be: I am planning to have $500,000 saved by the time I turn 65, which is 40 years from now. Assuming I can make 6% on my money, what is the value of that money now (this indicates present value)? The math formula is:

## PV = FV/ (1 + i)n

## Note that this is just the re-arrangement of terms from the above Future Value formula. Starting with the above FV formula, FV = PV (1 + i)n, you multiply each side by 1/(1 + i)n to get: FV/ (1 + i)n = PV or the PV = FV/ (1 + i)n  or PV = 500,000/ (1.06)40 or $48,611.10.

**Using the TI BAII Plus:**

First press [2nd][Quit] to return to standard calculator mode. Then press [2nd][CLR TVM] to clear the TVM worksheet. The following are the keystrokes to solve the problem.

500,000 [+/-][FV], 6 [I/Y], 40 [N], and [CPT][PV] for the answer.

**Using the TI 35 Solar:**

First press [2nd][CMR] to clear registers, and [CE/C] to clear memories. Then press [MODE] until you see the FIN in the lower left corner of the display. The following are the keystrokes to solve the problem. 500,000 [+/-][FV], 6 [%i], 40 [N], and [CPT][PV] for the answer.

**Using the TI-83**

To quit out of your current problem, type [2nd] [QUIT]. Then type [2nd][FINANCE} to go to the Finance mode. The calculator will highlight 1:TVM Solver. Hit [Enter]. There is no nice clear function with the TI-83, you must manually type a 0 in each of the 7 areas to clear the information. To solve the problem fill in the blanks: 40 [v] for number of years, 6 [v] for interest rate, [v] [v] and [(-)]500000[v] for future value,[v] 1[v] for payments a year, 1 [v] for coupon per year, [^][^][^][^] to present value, then [ALPHA][SOLVE] to get your answer.

**Using the HP 10BII**

Note that the 10BII has two [2nd] keys, the orange [[o]] key and purple [[p]] key. Type [[o]][C ALL] to clear the memories. The problem then is 500,000 [+/-][FV], 6 [I/YR], 40 [N], and then [PV] for the answer.

**Using the HP 12C:**

Type [[o]][CLEAR FIN] to clear the financial registers and [o]][CLEAR REG] to clear the registers. Then press [[b]] [END] set your payments for the end of the period. The problem then is 500,000 [CHS][FV], 6 [i], 40 [n], and then [PV] for the answer.

**Using the HP 17BII:**

First press [EXIT][EXIT] to return to the basic mode. Type [[o]][CLEAR DATA] to clear the memories. Then press [FIN][TVM] to go to the TVM menu. Then press [OTHER] 1 [P/YR] [EXIT] to change the payments to annual payments. The problem then is 500,000 [+/-][FV], 6 [I%YR], 40 [N], and then [PV] for the answer.

**Using the HP-48 G or GX**

Get into the finance area, and enter the information to solve the problem. The problem is: 40[enter] for N, 6 [enter] for I, arrow down to FV, and enter 500000 [+/-][enter] for FV, 0 [enter] for pmt, 1 [enter] for P/Y. Then use the arrow keys to highlight PV, and press [solve].

**Using the Sharp Business/Financial EL-733A**

Type [[2ndF]] [MODE] repeatedly to put the calculator into the financial functions. FIN will appear in the upper right hand of the display. To clear the memory, type [[2ndF]] [CA] to clear the memories. This calculator only does problems assuming payments at the end of the period. The problem then is 500,000 [+/-][FV], 6 [I], 40 [n], and then [COMP][PV] for the answer.

### 3. FVIF of an Annuity

### A multiplier used to determine the future value of an annuity or future value of a set of constant payments. This is used to answer the question: Assuming I make a $2,500 *payment every year* (this is an annuity) for 30 years, and given the discount or interest rate is 5%, what will be the value of my investment when I retire *in 30 years* (this is future value)? The math formula is a bit more tricky. The formula is

###  FVn = Payment \* (FVIFAi,n) or

  **FVn,i = Payment \* [(1 + i)n -1] /i** = FV = $2,500 \* [(1.05)30 -1]/.05 = $166,097.12

**Using the TI BAII Plus:**

First press [2nd][Quit] to return to standard calculator mode. Then press [2nd][CLR TVM] to clear the TVM worksheet. The following are the keystrokes to solve the problem.

2500 [+/-][PMT], 5 [I/Y], 30 [N], [CPT][FV]

**Using the TI BA 35 Solar:**

First press [2nd][CMR] to clear registers, and [CE/C] to clear memories. Then press [MODE] until you see the FIN in the lower left corner of the display. The following are the keystrokes to solve the problem: 2500 [+/-][PMT], 5 [%i], 30 [N], [CPT][FV]

**Using the TI-83**

To quit out of your current problem, type [2nd] [QUIT]. Then type [2nd][FINANCE} to go to the Finance mode. The calculator will highlight 1:TVM Solver. Hit [Enter]. There is no nice clear function with the TI-83, you must manually type a 0 in each of the 7 areas to clear the information. To solve the problem fill in the blanks:

30 [v] for number of years, 5 [v] for interest rate, 0 [v] for present value, [(-)] 2500 [v] for payment, 1[v] for payments a year, 1 [v] for coupon per year, [^][^] to future value, then [ALPHA][SOLVE] to get your answer.

**Using the HP 12C:**

Type [[o]][CLEAR FIN] to clear the financial registers and [[o]][CLEAR REG] to clear the registers. Then press [[b]] [END] set your payments for the end of the period. The problem then is 2,500 [CHS][PMT], 5 [i], 30 [n], and then [FV] for the answer.

**Using the HP 10BII**

Note that the 10BII has two [2nd] keys, the orange [[o]] key and purple [[p]] key. Type [[o]][C ALL] to clear the memories. The problem then is 2500 [+/-][PMT], 5 [I/YR], 30 [N], and then [FV] for the answer.

**Using the HP 17BII:**

Type [[o]][CLEAR DATA] to clear the memories. Then press [FIN][TVM] if you are not already in the TVM menu. Then press [OTHER] 1 [P/YR] [EXIT] to change the payments to annual payments. The problem then is 2500 [+/-][PMT], 5 [I%YR], 30 [N], and then [FV] for the answer.

**Using the HP-48 G or GX**

Get into the finance area, and enter the information to solve the problem. The problem is: 30[enter] for N, 5 [enter] for I, arrow down to PMT, and enter 2500 [+/-][enter] for PMT, arrow down to P/Y, then 1 [enter] for P/Y. Then use the arrow keys to highlight FV, and press [solve].

**Using the Sharp Business/Financial EL-733A**

Type [[2ndF]] [MODE] repeatedly to put the calculator into the financial functions. FIN will appear in the upper right hand of the display. To clear the memory, type [[2ndF ]] [CA] to clear the memories. This calculator only does problems assuming payments at the end of the period. The problem then is 2500 [+/-][PMT], 5 [i], 30 [n], and then [COMP][FV] for the answer.

## 4. PVIF of an Annuity

### A multiplier used to determine the present value of an annuity or constant periodic payments. To compare annuities, you need to put them all on a constant basis and compare the present value, in today’s dollars, of each. This factor is used to answer a possible question such as: Assuming I will make $2,000 *payments every year* (this is an annuity) for 40 years into an IRA account, and given the discount or interest rate is 6%, what is the *current value* (that is the present value) of my investment in today’s dollars? The formula is

 **PVn,i = Payment \* (PVIFAn,I)**  or

  **PVn,i = Payment \* [ 1-( 1/(1 + i)n )]/i =** PV = 2,000 \* [1-(1/(1.06)40] /.06 **= $**30,092.59

**Using the TI BAII Plus:**

First press [2nd][Quit] to return to standard calculator mode. Then press [2nd][CLR TVM] to clear the TVM worksheet. The following are the keystrokes to solve the problem.

2000 [+/-][PMT], 6 [I/Y], 40 [N], [CPT][PV].

**Using the TI 35 Solar:**

First press [2nd][Quit] to return to standard calculator mode. Then press [2nd][CLR TVM] to clear the TVM worksheet. The following are the keystrokes to solve the problem.

2000 [+/-][PMT], 6 [I/Y], 40 [N], [CPT][PV].

**Using the TI-83**

To quit out of your current problem, type [2nd] [QUIT]. Then type [2nd][FINANCE} to go to the Finance mode. The calculator will highlight 1:TVM Solver. Hit [Enter]. There is no nice clear function with the TI-83, you must manually type a 0 in each of the 7 areas to clear the information. To solve the problem fill in the blanks:

40 [v] for number of years, 6 [v] for interest rate, 0 [v] for present value, [(-)] 2000 [v] for payment, 0 [v] for future value, 1[v] for payments a year, 1 [v] for coupon per year, [^][^][^][^] to present value, then [ALPHA][SOLVE] to get your answer.

**Using the HP 10BII**

Note that the 10BII has two [2nd] keys, the orange [[o]] key and purple [[p]] key. Type [[o]][C ALL] to clear the memories. The problem then is 2000 [+/-][PMT], 6 [I/YR], 40 [N], and then [PV] for the answer.

**Using the HP 12C:**

Type [[o]][CLEAR FIN] to clear the financial registers and [[o]][CLEAR REG] to clear the registers. Then press [[b]] [END] set your payments for the end of the period. The problem then is 2,000 [CHS][PMT], 6 [i], 40 [n], and then [PV] for the answer.

**Using the HP 17BII:**

Type [[o]][CLEAR DATA] to clear the memories. Then press [FIN][TVM] to go to the TVM menu if you are not already there. Then press [OTHER] 1 [P/YR] [EXIT] to change the payments to annual payments. The problem then is 2000 [+/-][PMT], 6 [I%YR], 40 [N], and then [PV] for the answer.

**Using the HP-48 G or GX**

Get into the finance area, and enter the information to solve the problem. The problem is: 40[enter] for N, 6 [enter] for I, arrow down to PMT then 2000 [+/-][enter] for PMT, arrow down to P/Y, 1 [enter] for P/Y. Then use the arrow keys to highlight PV, and press [solve].

**Using the Sharp Business/Financial EL-733A**

Type [[2ndF]] [MODE] repeatedly to put the calculator into the financial functions. FIN will appear in the upper right hand of the display. To clear the memory, type [[2ndF]] [CA] to clear the memories. This calculator only does problems assuming payments at the end of the period. The problem then is 2000 [+/-][PMT], 6 [i], 40 [n], and then [COMP][PV] for the answer.

## 5. Amortized Loan

### A loan paid off in equal installments, both principle and interest is an amortized loan. It is similar to an annuity. It is used to answer the possible question: Assuming you want to borrow $20,000 dollars at 13% interest and you want to repay it in 5 *annual payments* (this is an annuity), how much will you have to *pay each year* (this indicates present value)? The formula is the same as that shown above, i.e.

### PVn = Payment \* (PVIFAi,n). Put your borrowed amount into the equation, and solve for your payment. PVn,i = Payment \* [ 1-( 1/(1 + i)n )]/i = PV = 20,000 = Payment \* [1-(1/(1.13)5] /.13 = $5,686.29 per year.

**Using the TI BAII Plus:**

First press [2nd][CMR] to clear registers, and [CE/C] to clear memories. Then press [MODE] until you see the FIN in the lower left corner of the display. The following are the keystrokes to solve the problem: 20000 [+/-][PV], 13 [%i], 5 [N], [CPT][PMT].

**Using the TI BA35 Solar:**

First press [2nd][Quit] to return to standard calculator mode. Then press [2nd][CLR TVM] to clear the TVM worksheet. The following are the keystrokes to solve the problem. 20000 [+/-][PV], 13 [%i], 5 [N], [CPT][PMT].

**Using the TI-83**

To quit out of your current problem, type [2nd] [QUIT]. Then type [2nd][FINANCE} to go to the Finance mode. The calculator will highlight 1:TVM Solver. Hit [Enter]. There is no nice clear function with the TI-83, you must manually type a 0 in each of the 7 areas to clear the information. To solve the problem fill in the blanks:

5 [v] for number of years, 13 [v] for interest rate, [(-)] 20000 [v] for present value, 0 [v] for payment, 0 [v] for future value, 1[v] for payments a year, 1 [v] for coupon per year, [^][^][^] to payment, then [ALPHA][SOLVE] to get your answer.

**Using the HP 10BII**

Note that the 10BII has two [2nd] keys, the orange [[o]] key and purple [[p]] key. Type [[o]][C ALL] to clear the memories. The problem then is 20,000 [+/-][PV], 13 [I/YR], 5 [N], and then [PMT] for the answer.

**Using the HP 12C:**

Type [[o]][CLEAR FIN] to clear the financial registers and [[o]][CLEAR REG] to clear the registers. Then press [[b]] [END] set your payments for the end of the period. The problem then is 20,000 [CHS][PV], 13 [i], 5 [n], and then [PMT] for the answer.

**Using the HP 17BII:**

Type [[o]][CLEAR DATA] to clear the memories. Then press [FIN][TVM] to go to the TVM menu if you are not already there. Then press [OTHER] 1 [P/YR] [EXIT] to change the payments to annual payments. The problem then is 20,000 [+/-][PV], 13 [I%YR], 5 [N], and then [PMT] for the answer.

**Using the HP-48 G or GX**

Get into the finance area, and enter the information to solve the problem. The problem is: 5[enter] for N, 13 [enter] for I, 20000 [enter] for PV, arrow down to P/Y, then 1 [enter] for P/Y. Then use the arrow keys to highlight PMT, and press [solve].

**Using the Sharp Business/Financial EL-733A**

Type [[2ndF]] [MODE] repeatedly to put the calculator into the financial functions. FIN will appear in the upper right hand of the display. To clear the memory, type [[2ndF]] [CA] to clear the memories. This calculator only does problems assuming payments at the end of the period. The problem then is 20,000 [+/-][PV], 13 [i], 5 [n], and then [comp][PMT] for the answer.

Now the question is: What happens if instead of solving for annual payments, we want to solve for monthly payments. Below is the process for solving the above problem for monthly versus annual payments (the answer is $455.06)

**Using the TI BAII Plus:**

First press [2nd][Quit] to return to standard calculator mode. Then press [2nd][CLR TVM] to clear the TVM worksheet. The following are the keystrokes to solve the problem.

To change the payments to monthly, press [2nd][P/Y] 12 [ENTER][2nd][Quit]. Then 20000 [+/-][PV], 13 [I/Y], 5 [2nd][xP/Y][N], [CPT][PMT] of $455.06

**Using the TI BA35 Solar:**

First press [2nd][Quit] to return to standard calculator mode. Then press [2nd][CLR TVM] to clear the TVM worksheet. The following are the keystrokes to solve the problem. Then 20000 [+/-][PV], 13 [2nd][/12] [%i], 5 [2nd][\*12][N], [CPT][PMT] of $455.06

**Using the TI-83**

To quit out of your current problem, type [2nd] [QUIT]. Then type [2nd][FINANCE} to go to the Finance mode. The calculator will highlight 1:TVM Solver. Hit [Enter]. There is no nice clear function with the TI-83, you must manually type a 0 in each of the 7 areas to clear the information. To solve the problem fill in the blanks: 5 x 12 [v] for number of years, 13 / 12 [v] for interest rate, [(-)] 20000 [v] for present value, 0 [v] for payment, 0 [v] for future value, 11 [v] for monthly payments a year, 11 [v] for monthly coupon per year, [^][^][^] to payment, then [ALPHA][SOLVE] to get your answer. **For some reason we couldn’t get the monthly payments to work correctly, so we set it up this way.**

**Using the HP 10BII**

Type [[o]][C ALL] to clear the memories. Then press 12 [[o]][P/YR] [[o]][C ALL] to change the payments to monthly payments and [[o]][BEG/END to set your payments for the end of the period. The problem then is 20,000 [+/-][PV], 13 [I%YR], 5 [[o]] [N], and then [PMT] for the answer.

**Using the HP 12C:**

Type [[o]][CLEAR FIN] to clear the financial registers and [[o]][CLEAR REG] to clear the registers. Then press [[b]] [END] set your payments for the end of the period. The problem then is 20,000 [CHS][PV], 13 [[b]] [i], 5 [[b]] [n], and then [PMT] for the answer.

**Using the HP 17BII:**

Type [[o]][CLEAR DATA] to clear the memories. Then press [FIN][TVM] to go to the TVM menu if you are not already there. Then press [OTHER] 12 [P/YR] [EXIT] to change the payments to monthly payments. The problem then is 20,000 [+/-][PV], 13 [I%YR], 5 [[o]] [N], and then [PMT] for the answer.

**Using the HP-48 G or GX**

Get into the finance area, and enter the information to solve the problem. The problem is: 60[enter] for N, 13 [enter] for I, 20000 [enter] for PV, arrow down to P/Y, then 12 [enter] for P/Y. Then use the arrow keys to highlight PMT, and press [solve]. Note that you must calculate the monthly payments (i.e., 5\*12) in your head or outside the finance area.

**Using the Sharp Business/Financial EL-733A**

Type [[2ndF]] [MODE] repeatedly to put the calculator into the financial functions. FIN will appear in the upper right hand of the display. To clear the memory, type [[2ndF]] [CA] to clear the memories. This calculator only does problems assuming payments at the end of the period. 20,000 [+/-][PV], 13 [[2ndF]] [/12][I], 5 [[2ndF]][x12][N], and then [COMP][PMT] for the answer.

**Key Formulas for Personal Finance**

## 1. Future Value (FVIF)

## The value of an investment at some point in the future, used for planning and forecasting purposes. The question would be: I have $2,500 saved. If my investment earns 10% per year for 20 years, how much will it be worth in 20 years? The math formula is:

**FV = PV (1 + i)n** where FV = future value, PV = present value, i=interest rate, n = number of years

FV = $2,500 \* (1 + .10) 20 or $16,818.75

This is the same formula for compounding, except with a minor difference. The formula for compounding is FV = PV (1 + i/p)np The i is the annual interest rate but divided by p, the period for compounding. The exponent is the number of years n times the number of periods for compounding p.

## 2. Present Value (PVIF)

## The current value, that is, the value in today’s dollars, of a future sum of money or stream of money. A possible question would be: I am planning to have $500,000 saved by the time I turn 65, which is 40 years from now. Assuming I can make 6% on my money, what is the value of that money now? The math formula is:

## PV = FV/ (1 + i)n

## Note that this is just the re-arrangement of terms from the above formula. Starting with the above FV formula, FV = PV (1 + i)n, you multiply each side by 1/(1 + i)n to get: FV/ (1 + i)n = PV or the PV = FV/ (1 + i)n

## PV = 500,000/ (1.06)40 or $48,611.10.

### 3. FVIF of an Annuity

### A multiplier used to determine the future value of an annuity or future value of a set of constant payments. This is used to answer the question: Assuming I make a $2,500 payment every year for 30 years, and given the discount or interest rate is 5%, what will be the value of my investment when I retire in 30 years? The math formula is a bit more tricky. The formula is

###  FVn = Payment \* (FVIFAi,n) or

  **FVn,i = Payment \* [(1 + i)n -1] /i** = FV = $2,500 \* [(1.05)30 -1]/.05 = $166,097.12

## 4. PVIF of an Annuity

### A multiplier used to determine the present value of an annuity or constant periodic payments. To compare annuities, you need to put them all on a constant basis and compare the present value, in today’s dollars, of each. This factor is used to answer the question: Assuming I will make $2,000 payments every year for 40 years into an IRA account, and given the discount or interest rate is 6%, what is the current value of my investment in today’s dollars? The formula is

 **PVn,i = Payment \* (PVIFAn,I)**  or

  **PVn,i = Payment \* [ 1-( 1/(1 + i)n )]/i =** PV = 2,000 \* [1-(1/(1.06)40] /.06 **= $**30,092.59

## 5. Amortized Loan

### A loan paid off in equal installments, both principle and interest is an amortized loan. It is similar to an annuity. It is used to answer the question: Assuming you want to borrow $20,000 dollars at 13% interest and you want to repay it in 5 annual payments, how much will you have to pay each year? The formula is the same as that shown above, i.e.

###  PVn = Payment \* (PVIFAi,n). Put your borrowed amount into the equation, and solve for your payment.

**PVn,i = Payment \* [ 1-( 1/(1 + i)n )]/i =** PV = 20,000 = Payment \* [1-(1/(1.13)5] /.13 **=** $5,686.29 per year.

Disclaimer

The purpose of this material and this class is to help you get your financial house in

order and to help you on your road to financial self-reliance.  If there are mistakes in this

material, please bring them to our attention, and we will correct them in upcoming

versions.  The teacher, and BYU, specifically disclaim any liability or responsibility for claims, loss, or risk incurred, directly or indirectly, by using this material.