

ClassPad for Further Math Units 3&4

Assumed skills from General Math Units 1&2 include setting up and using NumSolve strips in eActivities; and calculations and working with expressions and equations in main.

ClassPad Help Series movies are shown [\[911, 912\]](#)

ClassPad OS update from <http://edu.casio.com>

Main

- Check general settings at bottom of screen: Alg - Decimal - Real - Deg
- Always use variables from the VAR menu
- Enter settings in main, then Basic Format and select **Normal 2** as Number Format

NumSolve [\[911, 912\]](#)

N1. If $V = A(1 + R \div (100N))^N$, find R when $V=10442.85$, $A=\$9\,500$ and $N=12$.

Ans: 9.5%

eActivity [\[601, 630, 631, 633\]](#)

- Store and save common formulas using NumSolve strips.

E1. Geometric sequence, $T = ar^{n-1}$. Determine the 10th term of a GP with $a=5000$ and $r=0.6$.

Ans: 50.4

E2. Use the effective interest rate formula $E = (1 + R \div N)^N - 1$ to find E when $R=6.75\%$ pa and $N=12$.

Ans: 6.963%

E3. The four-point centred moving average of 45, 40, 44, 48 and X is 45.25. Calculate X.

Ans: 53

How to download eActivities, programs, etc on to your ClassPad:
Watch video 991 at www.classpad.com.au

Statistics [\[411, 441\]](#) - type carefully and slowly!

ST1. Determine the coefficient of determination between x and y and use the linear regression line y on x to predict y when (i) $x=40$ (ii) $x=70$ using this data:

x	29	35	47	50	59
y	51	69	83	98	121

Ans: 0.966, $y=2.198x-12.308$, 75.6, 141.5

ST2. [\[442\]](#) Use a residual plot to assess how appropriate fitting a linear model to the data below is.

x	12	14	16	18	20	22
y	55	35	23	14	9	6

Ans: Not appropriate as a pattern is evident in residuals

Sequence [\[800\]](#) - choose type first

S1. [\[802\]](#) Find the 20th term of the sequence given by $T_{n+1} = 1.2T_n$, where $T_1 = 12$, correct to 2 dp.

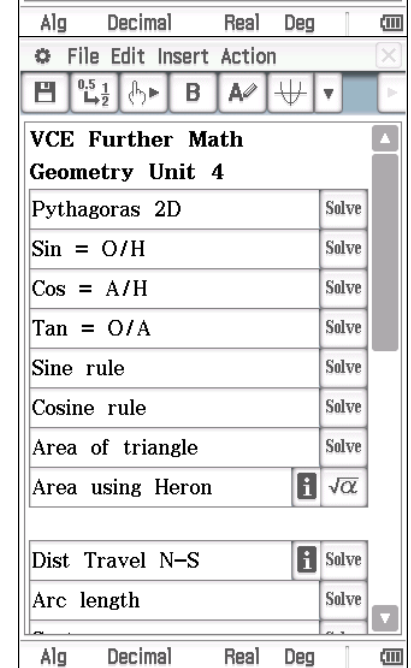
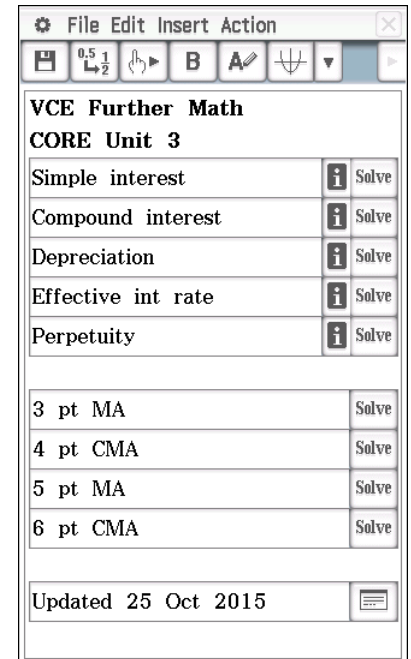
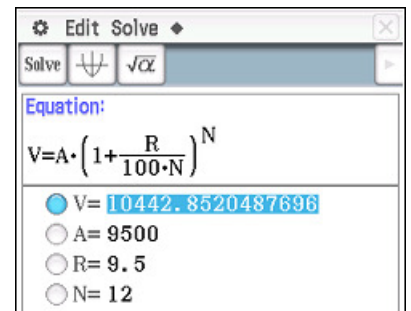
Ans: 383.38

S2. Sketch a graph of the recurrence relation $T_{n+1} = -0.5T_n + 6$, where $T_1 = 2$, and hence describe the long term behaviour of this sequence.

Ans: Steady state (tends to 4)

S3. [\[841\]](#) A loan of \$6 900 is repaid by monthly payments of \$725. Interest of 0.9% monthly applies to the loan. How long will it take to repay the loan, and how much is the final repayment?

Ans: 10 months, \$720.98



Financial

When money comes out of your pocket and goes to the bank (such as savings, a deposit for an annuity or a loan repayment), enter PV and/or PMT as -ve. When money comes out of the bank and into your pocket (such as a loan, or annuity payment), enter PV and/or PMT as +ve.

F1. [922] Calculate the future value of \$2000 invested at 6% pa compounded monthly over 3 years.

Ans: \$2393.36

FV is positive, since this is the amount to be returned to your pocket from the bank.

Compound Interest	
N	36
I%	6
PV	-2000
PMT	0
FV	2393.36105
P/Y	12
C/Y	12

F2. [923] A loan of \$3 700 is to be repaid in full by 12 equal monthly payments. Interest of 8.4% pa is compounded monthly. Determine the monthly repayment required, and also the amount outstanding after the sixth payment has been made.

Ans: \$322.54, \$1888.72

FV is negative, since this is the amount that is still to come out of your pocket to go to the bank (repay loan).

Compound Interest	
N	6
I%	8.4
PV	3700
PMT	-322.54
FV	-1888.720562
P/Y	12
C/Y	12

F3. A young person opens a savings account paying 5.9% pa (compounded monthly) with a deposit of \$930 and then adds \$85 from their wages each month. How long will it take to save at least \$3000?

Ans: 22 months

FV is entered as positive, since this is money that is to be returned to your pocket from the bank.

Compound Interest	
N	21.94231503
I%	5.9
PV	-930
PMT	-85
FV	3000
P/Y	12
C/Y	12

Programs

Use **APII**, **GPII**, **TimeSII**, **RepayII** and **SavingII** and other free programs to simplify routine tasks but make sure you understand their limitations.

P1. A student puts a sum of money in their piggy bank and then adds a fixed amount each week. In week 7 there was \$33 in the piggy bank and in week 15 there was \$45. How much did they place in the piggy bank in the first week, how much did they add each week and in which week will there be at least \$75 in the piggy bank?

Ans: Use APII to get \$24, \$1.50, week 35

P2. [946] A loan of \$2340, with a rate of 12% pa, is serviced by monthly repayments of \$280. Complete a table of repayments. What is the final repayment and how much is repaid in total?

Ans: Use RepayII to get \$216.04, \$2456.04

Summary Information	
Initial Loan	2340
Int Rate %pa	12
Repayment	280
Payments/yr	12
Payments	9
Last Paymnt	216.04
Total Repaid	2456.04
Total Int	116.04

Spreadsheet [500]

SS1. [545] Understand how a spreadsheet/table can be used to (i) smooth time series data using moving averages; and (ii) deseasonalise a time series using a seasonal indices.

System

- Name - Power Properties - Reset to fix problems (and Initialize if that doesn't work).

Keep your ClassPad operating system up to date.
 How To Update OS: Video 990 at www.classpad.com.au