Computational Mathematics/Information Technology

Solutions Worksheet 4

Financial Functions

1. For Task2(a) an acceptable way of writing out the solution is:
   The final value is given by: **= FV(0.3%,60,-25,-100,0)=£1760.48**
   Complete the following for (b) - (e) showing the financial function used along with its parameters.

   (b) **=NPER(0.5%,-25,-100,1000,0) = 32.58** (accept 33)

   (c) **=RATE(48,-25,-100,1500,0,0) = 0.55%**

   (d) **=PMT(0.3%,60,-100,2500,0) = −£36.27 increase = £11.27**

   (e) **=PV(0.3%,60,-25,2000,0) = −£300.12 increase = £200.12** [*2 marks*]

2. For Task 4, and again writing out the financial functions used, complete the following, giving interest rates to 2 decimal places:

   The interest on my loan **= RATE(36,-40,1200,0,0) =1.02%**

   The interest on my brother's loan **= RATE(36,-80,2400,0,0) =1.02%**

   The interest on my brother's loan over the longer period

   = RATE(48,-80,2400,0,0) =2.11% [*2 marks*]

3. For Task 6: (OK if use type 0 instead of type 1)

   The number of payments **=NPER(1.75%,-100,2500,0,1) =32.4**
   (accept =NPER(1.75%,-100,2500,0,0) =33.2
   (*this will not be a whole number of payments*)

   Hence the whole number of payments **=33** (accept 34 if using type 0)
   Using this value for the whole number of payments calculate the actual amount of each payment:

   =PMT(1.75%,33,2500,0,1) =−£98.64 [*2 marks*]
   (accept =PMT(1.75%,34,2500,0,0) =−£98.18
   In this type of problem the payments are at the start of each period thus the "type" parameter should be set equal to 1

   Marking Notes 1: *Allow the ommission of the minus signs in Q1 (d), (e) and Q3.*
   Marking Notes 2: *Interest rates must have at least 2 decimal places. Do no penalise more, but do penalise fewer.*
   Marking Notes 3: *Allow 2 marks for a totally correct solution to a question. For any error, but otherwise a mostly correct solution, give 1 mark .*