(iii) Then calculate the present value at the issue date, using Method A formula (ii) of Determination G10B. Often this can be accomplished quickly on a financial calculator.

(iv) Compare this present value to the issue price and make a better estimate of F.

(v) If F is not sufficiently accurate (generally ascertained by comparing it with the previous value, or comparing the present value to the issue price) go back to step (i).

In the present case, the following HP-12C program will enable successive estimates of F to be tested:

Setup

4	(n)	Number of halfyear periods from issue to first coupon payment date
0	(PMT)	No coupon for 4 periods
90	(STO) 1	Save issue price
7	(STO) 2	Save coupon per period

Program

(f) (R/S) to start
(RCL) 2
(RCL) (i)
.01 (×)
(÷)
This gives the present value E/F as at 1/2/93 of all payments after that date.
(FV)
(PV)
(RCL) 1
(+)
This gives the difference between the issue price and the present value.
(g) (GTO) 00
(f) (R/S) to end.

Calculating

Estimate half yearly interest rate, press (i), then press (R/S).

Estimate	*Difference*
6.000	−2.411
6.250	2.118
6.150	0.352
6.140	0.172
6.130	−0.009
6.131	0.009
6.1305	0.000

Therefore the Annual Yield to Maturity Rate is

2 × 6.1305% = 12.261% p.a.

Other programs might be needed in other examples.

(b) Since the balance date is not a date on which an amount is payable, formula (ii) of Method A must be used to calculate the present value as the balance date, using the present value as at the immediately succeeding payment date and the payment then due.

(c) There are 32 days from 30 June to 1 August so that in all years—

$N = 365/32$
$F = R/(100 \times N) = 12.261/(100 \times 365/32) = 0.01075$
$1 + F = 1.01075$

From Example D of Determination G10B: Present Value Calculation Methods, the present values at each balance date are calculated as follows:

Balance Date	Next Period End: Date	Present Value A	Payments by issuer B	Present Value at balance date
30/6/91	1/8/91	95.52	–	94.50 (i)
30/6/92	1/8/92	107.58	–	106.44 (ii)
30/6/93	1/8/93	114.18	7.0	119.89 (iii)
30/6/94	1/8/94	114.18	7.0	119.89

(i) Calcalated as (A + B − C)/(1 + F) where—

A = Present Value at the end of the period immediately following the given date
= 95.52

B = amounts receivable by the holder/payable by issuer at end of the period following the given date
= nil

C = amounts payable by holder/receivable by issuer at the end of the period immediately following the given date
= nil (in all cases in this example)

1 + F = 1.01075 (as above)

therefore $(A + B - C)/(1 + F) = (95.52 + 0 - 0)/1.01075 = 94.50$

(ii) $(A + B - C)/(1 + F) = 107.58 + 0 - 0/1.01075 = 106.44$

(iii) $(A + B - C)/(1 + F) = (114.18 + 7 - 0)/1.01075 = 119.89$

(d) The following schedule may then be constructed, showing the expenditure incurred by the issuer in respect of each Income Year:

Income Year Ending 30 June	Present Value at year end (a) or (d)	Payments in year by— Holder (b)	Issuer (c)	Expenditure Incurred by issuer
1991	94.50	90.00	–	4.50 (i)
1992	106.44	–	–	11.94 (ii)
1993	119.89	–	–	13.45 (iii)
1994	119.89	–	14.00	14.00 (iv)
1995	119.89	–	14.00	14.00 (iv)
....	....	....	....	....

Notes:

(i) 94.50 − 90.00 = 4.50
(ii) 106.44 − 94.50 = 11.94
(iii) 119.89 − 106.44 = 13.45
(iv) 119.89 + 14.00 − 119.89 = 14.00

The constant expenditure from the 30 June 1994 income year onwards is to be expected, and would only change if the issuer's balance date changed, or there was a change in the terms of the security.

Unless the note is repaid under the terms of its issue (such as default) or sold, then there will never be a base price adjustment.

This Determination is signed by me on the 24th day of October in the year 1990.

R. D. ADAIR, Deputy Commissioner of Inland Revenue.
go12645

Determination G13A: Prices or Yields

This determination may be cited as "Determination G13A: Prices or Yields".

1. Explanation (which does not form part of the determination).

(1) This determination rescinds and replaces Determination G13: Prices or Yields made on the 8th day of February 1989.

(2) This determination applies where for the purpose of calculating the income or expenditure of a person it is necessary to determine a price or yield for valuation purposes. This may arise where a person wishes to calculate income or expenditure in relation to a financial arrangement pursuant to section 64C (4) of the Act. (For example, in the application of a market valuation method for calculating the amount of