```
'Internal Rate of Return Function
'Programmed By S. Malpezzi, 03.21.00


'function zirr passes two arguments: an initial guess, and
'the range containing the cash flows
Function zirr(guess, flows)

xpv = Application.NPV(guess, flows) 'compute npv with original guess

  If xpv > 0 Then
     Do Until xpv < 0
       guess = guess + 0.00001
       xpv = Application.NPV(guess, flows)
      Loop
  Else
     Do Until xpv > 0
       guess = guess - 0.00001
       xpv = Application.NPV(guess, flows)
     Loop
  End If

zirr = guess 'return the answer to the spreadsheet

End Function
```

```
'Improved Internal Rate of Return Function
'Programmed By S. Malpezzi, 07.21.01


'function zirr2 passes two arguments: an initial guess, and
'the range containing the cash flows
Function zirr2(guess, flows)

xpv = Application.NPV(guess, flows) 'compute npv with original guess

For x = 1 To 7 'loop through several times, with increasing precision
            'how large x gets determines precision of answer

delta = 1 / (10 ^ x) 'delta gets smaller as x increases
'delta = 0.000001

  If xpv > 0 Then
     Do Until xpv < 0
       guess = guess + delta
       xpv = Application.NPV(guess, flows)
      Loop
  Else
     Do Until xpv > 0
       guess = guess - delta
       xpv = Application.NPV(guess, flows)
     Loop
  End If

Next x

zirr2 = guess 'return the answer to the spreadsheet

End Function
```