Numerical Examples of Coupon Yield, Current Yield and Yield to Maturity Relationships

1. Formula for solving for yield to maturity in an annual pay bond:

\[
P = \frac{c}{(1+r)} + \frac{c}{(1+r)^2} + \cdots + \frac{c+F}{(1+r)^t}
\]

N.B. You may use internal rate of return (IRR) function to solve for yield to maturity.

2. For C=80, t=4 and F=1000, we have

\[
P = \frac{80}{(1+r)} + \frac{80}{(1+r)^2} + \frac{80}{(1+r)^3} + \frac{1080}{(1+r)^4}
\]

3. For a bond selling at par:
   If P = $100 per $100 Face Value, then substituting P = 1000 produces

   (1) C/F = .08       (2) C/P = .08       (3) YTM = IRR = .08
   or     CF = C/P = YTM

4. For a bond selling at a discount:
   If P = $90 per $100 Face Value, then substituting P = 900 produces

   (1) C/F = .08       (2) C/P = .0888     (3) YTM = IRR = .1123
   or     C/F < C/P < YTM

5. For a bond selling at a premium:
   If P = $110 per $100 Face Value, then substituting P = 1100 produces

   (1) C/F = .08       (2) C/P = .0727     (3) YTM = IRR = .0516
   or     C/F > C/P > YTM