9. Award: 0 out of 10.00 points

Williams Software has 9.8 percent coupon bonds on the market with 18 years to maturity. The bonds make semiannual payments and currently sell for 107.7 percent of par.

a. What is the current yield on the bonds? **(Do not round intermediate calculations and enter your answer as a percent rounded to 2 decimal places, e.g., 32.16.)**
b. What is the YTM? **(Do not round intermediate calculations and enter your answer as a percent rounded to 2 decimal places, e.g., 32.16.)**
c. What is the effective annual yield? **(Do not round intermediate calculations and enter your answer as a percent rounded to 2 decimal places, e.g., 32.16.)**

a. Current yield		%
b. YTM		%
c. Effective annual yield		%

References

Worksheet Learning Objective: 07-02 Explain bond values and yields and why they fluctuate.

Difficulty: 2 Intermediate Section: 7.1 Bonds and Bond Valuation

Williams Software has 9.8 percent coupon bonds on the market with 18 years to maturity. The bonds make semiannual payments and currently sell for 107.7 percent of par.

a. What is the current yield on the bonds? **(Do not round intermediate calculations and enter your answer as a percent rounded to 2 decimal places, e.g., 32.16.)**
b. What is the YTM? **(Do not round intermediate calculations and enter your answer as a percent rounded to 2 decimal places, e.g., 32.16.)**
c. What is the effective annual yield? **(Do not round intermediate calculations and enter your answer as a percent rounded to 2 decimal places, e.g., 32.16.)**

a. Current yield	9.10+/-1%	%
b. YTM	8.93+/-1%	%
c. Effective annual yield	9.13+/-1%	%

Explanation:

Note: Intermediate answers are shown below as rounded, but the full answer was used to complete the calculation.

The current yield is:

Current yield = Annual coupon payment/Price
Current yield = $98/$1,077
Current yield = .0910, or 9.10%

The bond price equation for this bond is:

$P_0 = \$1{,}077 = \$49(\text{PVIFA}_{R\%,36}) + \$1{,}000(\text{PVIF}_{R\%,36})$

Using a spreadsheet, financial calculator, or trial and error we find:

$R = 4.466\%$

This is the semiannual interest rate, so the YTM is:

YTM = 2 × 4.466%
YTM = 8.93%

The effective annual yield is the same as the EAR, so using the EAR equation from the previous chapter:

Effective annual yield = $(1 + .04466)^2 - 1$
Effective annual yield = .0913, or 9.13%

Calculator Solution:

Enter	36		±$1,077	$98/2	$1,000
	N	I/Y	PV	PMT	FV
Solve for		4.466%			

4.466% × 2 = 8.93%

Enter	8.93 %		2
	NOM	EFF	C/Y
Solve for		9.13%	