

## Sample Problems—Bonds

1. Consider a \$1,000 par value bond with a 7 percent annual coupon. The bond pays interest annually. There are 9 years remaining until maturity. What is the **current yield** on the bond assuming that the required return on the bond is 10 percent?
2. Assume that you wish to purchase a 20-year bond that has a maturity value of \$1,000 and makes semi-annual interest payments of \$40. If you require an annual 10 percent rate of return on this investment, what is the maximum price you should be willing to pay for the bond?
3. Suppose Ford Motor Company sold an issue of bonds with a 12-year maturity, a \$1,000 par value, a 12% coupon rate. **Two years after** the bonds were issued, the going rate of interest on bonds such as these had risen to 14 percent. At what price would the bonds sell?
4. Delta Corporation has a bond issue outstanding with an annual coupon interest rate of 9 percent and 4 years remaining until maturity. The par value of the bond is \$1,000. What is the current yield of the Delta Corporation bond if the bond currently sells for \$713.75?
5. Suppose Ford Motor Company have 10 years remaining to maturity. Interest is paid annually; the bonds have a \$1,000 par value; and the coupon interest rate is 12 percent. Compute the yield to maturity for the bonds if the current market price is \$910.
6. What is the value of an Orion bond that has a 10 percent annual coupon, pays interest semiannually, and has 10 years to maturity, if the annual required rate of return is 12 percent?
7. A bond has a coupon rate of 8.5%, matures in 10 years at a value of \$1,000 and has a current market price of \$832. What is the current yield?
8. What is the value of a bond with 20 years left to maturity, a coupon payment of \$50 every 6 months, and a \$1,000 face value if the yield to maturity is 8%?
9. The price of a bond is \$736.68, it has 16 years to maturity, a \$1,000 face value, and pays an annual coupon of \$100. What is the yield to maturity?
10. What is the yield to maturity of a TVA bond that has a 9 1/2 percent coupon, pays interest semi-annually, has 12 years to maturity, and sells for \$871.50?
11. The required rate of return on a bond issued by Who LTD is 11 percent. "Who" has a bond issue outstanding that pays interest semiannually, is selling for \$845 and matures in 8 years. What is the annual coupon rate on the outstanding bond?
12. Cornerstone Industries has a bond outstanding that has a 7% coupon rate and a market price of \$887.76. If the bond matures in 5 years, what is the yield to maturity on the bond?
13. J&J Manufacturing just issued a bond with a \$1,000 face value and a coupon rate of 7 percent. If the bond has a life of 30 years, pays annual coupons, and the yield to maturity is 9 percent what will the bond sell for?
14. The Whitesell athletic Corporation's bonds are currently selling for \$900. Each has a face value of \$1,000 and a 10% coupon paid semi-annually until maturity 5 years from now. What is the bond's current yield?
15. Cold Boxes Ltd. has \$1,000 par value bonds outstanding. The yield to maturity on these bonds is currently 10 percent. The bonds mature in 5 years, pay interest semi-annually, and have a current market value of \$768.35 per bond. What is the annual coupon interest rate?

16. Due to a number of lawsuits related to toxic wastes, a major chemical manufacturer has recently experienced a market reevaluation. The firm has a bond issue outstanding with 15 years to maturity and a coupon rate of 8 percent, with interest being paid semiannually. The required rate of return on these bonds has now risen to 16 percent. What is the current value of this bond?
17. What is the current yield of a bond with a 6% coupon, four years until maturity, and a price of \$750?
18. What is the coupon rate for a bond with three years until maturity, a price of \$1,053.46, and a required rate of return of 6%?
19. What is the yield to maturity of a bond with a coupon rate of 8%, semi-annual payments, current price of \$960 and three years until maturity?
20. What should be the price of a bond with 12 years to maturity and a 10% coupon rate if the required rate of return on the bond is 8 percent?
21. Mustaine Enterprises has bonds on the market making annual payments, with 13 years to maturity, and selling for \$850. At this price, the bonds yield 7.4 percent (YTM). What is the coupon rate on these bonds?
22. If the YTM on the following bonds are identical except, what is the price of bond B?

	Bond A	Bond B
Face value	\$1,000	\$1,000
Semiannual coupon	\$45	\$35
Years to maturity	20	20
Price	\$1,098.96	?

23. Neverwho Co. has 7 percent coupon bonds on the market with eight years left to maturity. The bonds make annual payments. If the bonds currently sell for \$902.25, what is YTM?
24. Joe Kernan Corporation has bonds on the market with 10.5 years to maturity, a YTM of 8.5 percent, and a current price of \$1,090. The bonds make semiannual interest payments. What must the coupon rate be on Kernan's bonds?
25. Whitesell Athletic Corporation's bonds have a face value of \$1,000 and a 9% coupon; the bonds mature in 8 years. What is the current yield on the bonds assuming that the required rate of return is 7%?
26. The Whitesell Athletic Corporation's bonds have a face value of \$1,000 and a 10% annual coupon, paid semiannually until maturity 5 years from now. What is the current yield that would be reported in the Wall Street Journal if the yield to maturity is 8%? Hint, current yield is stated on an annual basis.
27. Macrohard, Inc. carry a 10% annual coupon, have a \$1,000 face value, and mature in 4 years. Yield to maturity is 7%. What is the market value of Microhard's bonds?
28. A 12-year bond pays an annual coupon of 8.5 percent. The bond has a yield to maturity of 9.5 percent and a par value of \$1,000. What is the bond's current yield?
29. Fish & Chips Inc. has two bond issues outstanding, and both sell for \$701.22. The first issue has an annual coupon rate of 8 percent and 20 years to maturity. The second has an identical yield to maturity as the first bond, but only 5 years until maturity. Both issues pay interest annually. What is the annual interest payment on the second issue?

30. A corporate bond with a \$1,000 face value pays a \$50 coupon every six months. The bond will mature in ten years, and has a yield to maturity of 9 percent. What is the price of the bond?