Practice Problems

1. For each lump-sum present value, calculate the future value at the given rate and compounding period. Note that you can also discount the FV and make sure you get the correct PV too.

PV	Rate	# of times/yr	# of years	FV (answer)
1000	1.00%	1	3	$1,030.30
2000	10.00%	1	4	$2,928.20
5000	6.00%	1	5	$6,691.13
5417	5.00%	2	10	$8,876.39
1534	5.00%	2	8	$2,277.23
4000	4.00%	2	12	$6,433.75
7000	6.00%	4	4.5	$9,151.38
3000	8.00%	4	10.75	$7,029.57
10000	7.00%	4	4	$13,199.29
7500	3.00%	12	6	$8,977.11
1000	10.00%	12	7	$2,007.92
2000	5.00%	12	8	$2,981.17
5000	4.00%	12	4	$5,865.99
1000	6.00%	12	8	$1,614.14
2000	5.00%	12	10.5	$3,377.23
5000	12.00%	24	5	$9,096.98
1000	8.00%	24	6	$1,614.78
2000	6.00%	26	7	$3,042.45
5000	6.54%	26	8.5	$8,711.46

2. Suppose the following bond characteristics, calculate the price for each bond (note that for rates that do not round evenly you may get answers off a penny or two).

Face Value	Coupon Rate	YTM	# of times/yr compounded	Maturity (# of years)	Price
1000	1.00%	2.000%	1	3	$971.16
2000	10.00%	8.000%	1	4	$2,132.49
5000	6.00%	10.000%	1	5	$4,241.84
100000	5.00%	12.000%	2	10	$59,855.28
1500	5.00%	6.000%	2	8	$1,405.79
4000	4.00%	6.500%	2	12	$3,175.58
7000	6.00%	7.500%	4	4.5	$6,602.10
3000	8.00%	6.900%	4	10.75	$3,249.03
10000	7.00%	8.750%	4	4	$9,414.70
7500	3.00%	6.667%	12	6	$6,143.13
1000	10.00%	9.000%	12	7	$1,051.79
2000	5.00%	4.750%	12	8	$2,033.22
5000	4.00%	3.875%	12	4	$5,023.12
1000	6.00%	4.750%	12	8	$1,083.06
2000	5.00%	4.875%	12	10.5	$2,020.51
5000	12.00%	11.000%	24	5	$5,191.97
1000	8.00%	8.750%	24	6	$965.04
2000	6.00%	5.500%	26	7	$2,058.05
5000	6.54%	9.875%	26	8.5	$4,042.00

Word problem practice

1. UM bonds pay an annual coupon rate of 10%. They have 8 years before maturity. The maturity value is $1,000. The yield to maturity (market interest rate) on this class of bonds is 10%. Determine the price of these bonds. [$1,000]

2. What is the value of a government bond that pays semiannual payments of $50 (coupon rate of 10%) and has a maturity value of $1,000 if the annual market interest rate is 12% and the bond has 20 years until maturity? [$ 849.53]

3 The Banzai Auto Company has experienced a market re-evaluation lately due to a number of lawsuits. The firm has a bond issue outstanding with 15 years to maturity and a coupon rate of 8% (paid semiannually). The required rate has now risen to 12.25%. At what price can these securities be purchased on the market? [$ 711.37]

4. Liddy Corporation has bonds that pay an annual coupon rate of 8% and a maturity value of $1,000. The yield on comparable new bonds is 9.5%. The bonds have 7 years before they mature. Determine the value of one of Liddy's bonds. [$925.76]

5. Hamblin Inc. has bonds that pay a coupon rate of 11% and a maturity value of $1,000. The yield in the market for this risk class of bonds is 10.5 %. The bonds have 18 years before maturity. How much would one Hamblin bond be worth in the market? [$1,039.73]

6. Adeline Corporation just issued a zero coupon bond with a life of 15 years. The face value of these bonds is $100,000 and the market rate is 9.6%. What would be the price of these bonds? {25,283.76]

8. A major auto manufacturer has experienced a market re-evaluation lately due to a number of lawsuits. The firm has a bond issue outstanding with 15 years to maturity and a coupon rate of 8% (paid semiannually). The required rate has now risen to 16%. At what price can these securities be purchased on the market? [$549.69]