

# Interest Rates and Bond Valuation Practice Problems

From the book: Self Test Problem 7.1-7.2. Question and Problems (Same for both editions): 3-17, 21-22, 25-26, 31 (effective annual yield is equivalent to EAR)

1. An investment offers a 10.5 percent total return over the coming year. Tyson thinks the total real return on this investment will be only 6.2 percent. What does Tyson believe the inflation rate will be for the next year?
2. Creed Studios issued 20-year bonds a year ago at a coupon rate of 10.2 percent. The bonds make semiannual payments. The yield-to-maturity on these bonds is 9.2 percent. What is the current bond price? What if the payments were annual?
3. Bieber Salon has a 7.5 percent coupon bond on the market with ten years left to maturity. The bond makes annual payments and currently sells for \$842.10. What is the yield-to-maturity? What if the payments were semi-annual?
4. You want to have \$4.8 million in real dollars in an account when you retire in 42 years. The nominal return on your investment is 8 percent and the inflation rate is 2.5 percent. What is the real amount you must deposit each year to achieve your goal?
5. Nickleback Fan Club wants to issue new 18-year bonds for some much-needed expansion projects. The company currently has 11 percent bonds on the market that sell for \$1,459.51, make semiannual payments, and mature in 18 years. What should the coupon rate be on the new bonds if the firm wants to sell them at par?
6. Reynolds bonds have a face value of \$1,000 and are currently quoted at 98.4. The bonds have a 5 percent annual coupon rate. What is the current yield on these bonds? What is the YTM if the bond matures in 10 years? The capital gains yield?

## Answers to Textbook

### 11th Edition

- 3) 1,152.66 2 4) 4.13% 5) 5.07%
- 6) 958.78 7) 4.88% 8) 4.95% 9) 4,391.30
- 10) 2,224.04 11) 4,881.80 12) 2.84%
- 13) 5.06% 14) 2.29% 15) 7.98%
- 16) 4.375%; 11,260.16; 11,338.28
- 17) Premium; 3.918%; 3.604%; 7.82
- 21) 5.99%; 5.79%; 5.87%
- 22) 6.27% 25) 11.06 26) 4.77%; 5.23%
- 31) 13,547.76

### 12th Edition

- 3) 875.09 4) 2.97% 5) 4.29%
- 6) \$1,041.22 7) 4.93% 8) 5.75% 9) \$4,933.16
- 10) \$1,923.29 11) \$4,632.13 12) 2.45%
- 13) 5.57% 14) 3.98% 15) 8.66%
- 16) 4.500%; \$12,806.25; 127.4375; \$12,743.75
- 17) Premium; 3.564%; 2.855%; 6.25
- 21) 6.79%; 6.96%; 7.08%
- 22) 5.32% 25) 11.06 26) 4.88%; 5.23%
- 31) \$14,733.11

### Answer to above problems

- 1) 4.05%
- 2) 1,089.02; 1,088.28
- 3) 10.08%; 10.04%
- 4) 32,265.86
- 5) 6.60%
- 6) 5.08%; 5.21%; 0.13%