Fixed Income

Problem set to prepare for the quiz on the bootstrapping material

Problems. Show all work. Clearly indicate your answer to each question. For the purposes of this quiz you may assume that all 6-month periods are exactly one-half of a year, etc.

Today is Thursday, February 14, 2019. You observe the following Treasury notes on Bloomberg (for February 15 settlement):

Note	Coupon	Maturity	Price (% of par)
1	3.25%	Aug. 15, 2019	97.85
2	9.25%	Feb. 15, 2020	102.00
3	12.50%	Aug. 15, 2020	107.67

1. What are the 6-month, 1-year, and 18-month spot rates (expressed on a bond-equivalent basis) in this case?

2. What are the 6-month, 1-year, and 18-month discount factors?

3. Suppose that you also see the following note on the same day:

Note	Coupon	Maturity	Price (% of par)
4	6.50%	Aug. 15, 2020	97.0000

   (a) What should the price of this note be according to the absence of arbitrage?

   (b) Demonstrate the arbitrage trade and show the cash flows from the trade on all relevant dates.