Problem Set 6 for Economics 180.266:  
Financial Markets and Institutions  
Due at the beginning of class on December 3

Note: Point totals are shown at the beginning of each question.

1. (30 points) Consider a simple collateralized debt obligation (CDO) consisting of 100 securities each of which pays nothing if they default and $1 million otherwise. The CDO is tranched into a senior tranche which pays the first $80 million, and a junior tranche that receives anything that is left. The price of the entire senior tranche is $77 million and the price of the entire junior tranche is $3 million.

Now suppose that an investor goes short the senior tranche and long the junior tranche. For what number of defaults would this investor make a profit?

Note: This is based on the “Magnetar” strategy discussed in class.

2. (10 points) Suppose that you took the short side in a September 2019 S&P500 futures contract on June 3, 2019. At the expiration of this contract, would you have made or received a payment? How much?

3. (10 points) Suppose that you took the short side in a September 2019 Eurodollar futures contract on June 3, 2019. At the expiration of this contract, would you have made or received a payment? How much?

4. (20 points). If you enter into one December 2019 CME/NYMEX short contract on West Texas Intermediate Crude Oil, please specify exactly what delivery obligation you have if you end up holding the contract to maturity.
(a) How many barrels do you deliver?
(b) Where do you deliver it?
(c) Is the oil to be light or heavy (light oil floats on water; heavy oil sinks)?
(d) Is the oil to be sweet or sour (sweet oil has low sulfur)?
(e) On what day or days can you deliver the oil?

5. (10 points). You buy a European put option at a strike price of $20 on GE shares. The option costs you $2.
(a) Suppose that at the maturity of the option, the price of GE shares is $19. What is your profit or loss on this position?
(b) Suppose that at the maturity of the option, the price of GE shares is $15. What is your profit or loss on this position?

6. (10 points). Suppose that the gold spot price is $1,000 and the risk-free rate is 2 percent per annum. According to spot-futures parity, what should the gold futures price for delivery in 1 year be? Please assume that gold storage costs are negligible, and of course gold pays no dividend.