1. (20 points) The ABC Company (an all-equity firm) currently has after-tax operating cash flows of $3.00 per share and pays out 50% of its earnings in dividends. If it expects to keep the same payout ratio, and to earn 20% on future investments forever, what will its current price per share be? Assume that the cost of capital is 15%.

2. (15 points) Suppose that $c_1$ and $p_1$ are the prices of a European average price call and a European average price put with strike $X$ and maturity $T$, $c_2$ and $p_2$ are the prices of a European average strike call and a European average strike put with maturity $T$, and $c_3$ and $p_3$ are the prices of a regular European call and a regular European put with strike price $X$ and maturity $T$. Show that

$$c_1 + c_2 - c_3 = p_1 + p_2 - p_3$$

3. (15 points) Suppose that the market price of risk for gold is zero. If the storage costs are 1% per annum and the risk-free rate of interest is 6% per annum, what is the expected growth rate in the price of gold?

4. (25 points) 代理問題（agency cost）

(1). 何謂代理問題？

(2). 為什麼公司（股份有限公司）會有代理問題？

(3). 說明股東和管理當局之間有哪些代理成本？

(4). 要如何解決股東和管理當局之間的代理問題？

(5). 學術文獻指出公司增發現金股利可以降低代理成本，也認為公司增加負債比增發股利更能降低代理成本。請利用自由現金流假設（free cash flow hypothesis）說明以上觀點。

5. (25 points) 假如有兩家公司，Apple 和 Orange 公司，對於市場投資人來說這兩家公司都是經營良好且有很好成長機會的公司。目前這兩家公司都需要向外籌措資金來支應新的投資方案，可能的方式是發行債券或是發行新普通股。請以資訊不對稱的角度來說明市場投資人對於公司選擇這兩種不同融資方式的可能反應。