PROBLEMS

1. Euroshipping Corporation maintains separate production and distribution facilities in Sweden, France, Spain, and Italy. The corporate headquarters is in France. As a consultant to the treasurer of Euroshipping, you have been asked to estimate how much money the firm could save by creating a centralized cash management pool. Currently, each affiliate maintains precautionary cash balances equal to 3 standard deviations above its expected demand for cash.

Affiliate	Mean Demand for Money	1 Standard Deviation
Swedish	€25,000,000	€7,000,000
French	€50,000,000	€13,000,000
Italian	€35,500,000	€10,000,000
Spanish	€20,000,000	€6,000,000

By how much could Euroshipping reduce its overall demand for cash if it were to create a centralized cash pool for the four affiliates? (Assume that the cash needs are normally distributed and are independent of each other.)

2. Euroshipping is also considering developing a multilateral netting system.
    a. Given the cumulative monthly payments in the following payments matrix, derive the minimum transfers that could be made.
        Euroshipping Intracompany Payments Matrix (millions of euros)

Receiving Affiliate	Paying Affiliate			
	Swedish	French	Italian	Spanish
Swedish	—	16	14	18
French	19	—	12	15
Italian	22	7	—	11
Spanish	9	15	3	—

    b. If the transaction costs on these fund transfers are 0.45%, how much would the company save by switching to a multilateral netting system?

3. Suppose the euro borrowing and lending rates for a German parent and its Spanish affiliate for a 90-day period are as follows:

	Borrowing Rate (in percent per annum)	Lending Rate (in percent per annum)
German parent	9.3	8.1
Spanish affiliate	9.6	7.9

In each of the following cases, determine the direction funds should flow and the return to the MNC of transferring EUR1,000,000:

a. The German parent has positive funds; the Spanish affiliate has negative funds.

b. The German parent has negative funds; the Spanish affiliate has positive funds.

c. The German parent has positive funds; the Spanish affiliate has positive funds.

d. The German parent has negative funds; the Spanish affiliate has negative funds.