FINM 37301 FINAL EXAM

Name (and CNet ID please): _____

- Calculators <u>are</u> allowed.
- Please <u>no</u> books or notes, <u>no</u> laptops or electronic devices that can store text.
- Please <u>turn your phone off</u> (and any electronics other than a calculator).

Please indicate your <u>answers</u> on the final exam sheets

- You do not need to show your work.
- Use a blue book if you want to write out any calculations, but do not return the blue book;
- We will not grade or consider any written calculations, only the final result.

1) A trader has the following position: buying GBP 25 million versus EUR at 0.8760. If the current EURGBP rate is 0.8420, what is the mark-to-market value of the position in GBP terms?

2) Assume USDCHF is 0.9200 and USDJPY is 92.00, what is the implied CHFJPY cross rate?

3) A trader has the following position: selling GBP 100 million versus JPY at 80.00. The current spot GBPJPY rate is 70.00, and current spot GBPUSD is 1.50. What is the market-to-market value of the trader's position in USD?

4) Assume the following rates, which include both bid and offer: USDNOK 8.5720 / 8.5730. If a customer (i.e., market taker) buys USD 25 million versus NOK, what will the USD amount be?

5) Find the all-in 3-month forward rate for USDJPY, ignoring bid/ask and assuming the following:

USDJPY spot 110.05
USD deposit rate 1.20%
JPY deposit rate -0.15%
90 days between spot and the forward date. USD and JPY deposit rates follow ACT/360.

6) Calculate the EUR interest rates implied by the following rates ("implied yield"), ignoring bid/offer.

EURUSD spot 1.1050
EURUSD forward 1.1115
USD deposit rate 1.40%
180 days between spot and the forward date. USD and EUR deposit rates follow ACT/360.

7) Assume the rates listed below, with bid and offer listed. What is the upper arbitrage limit for 6 month AUDUSD all-in forward rate?

AUDUSD 0.7650 / 0.7655
USD deposit rate 1.10% / 1.20%
AUD deposit rate 2.95% / 3.05%
180 days between spot and the forward date. USD deposit rates follow ACT/360, AUD deposit rates follow ACT/365.

8) Given the information below, calculate the FX swap points for a EURUSD position maturing in 3 months that needs to be rolled out to the 6 month date, ignoring bid/offer.

EURUSD spot   1.0950
3mo USD deposit   1.20%
6mo USD deposit   1.40%
3mo EUR deposit   0.10%
6mo EUR deposit   0.20%
90 days between spot and the 3-month forward date. 180 days between spot and the 6-month forward date. USD and EUR deposit rates follow ACT/360. ? (EURUSD forward points follow the common convention of 10^-4.)

9) A trader (market-maker) executes a USDCHF forward contract, buying CHF. If the spot rate (including bid/offer) is 0.9910/0.9915 and the forward point quote (also with bid/offer) is -33/-31, then what is the trader's all-in forward rate? (USDCHF forward points follow the common convention of 10^-4.)

10) If CNY deposit rates are higher than USD deposit rates for a particular maturity, then must the USDCNY non-deliverable forward rate for the same maturity be higher than the USDCNY spot rate? **(Indicate your answer by circling one of the following choices)**

   a) Yes, lower USD deposit rates imply the USD is stronger on a forward basis

   b) No, lower USD deposit rates imply the USD is weaker on a forward basis

   c) No, non-deliverable forward rates can violate the covered interest rate parity formula

   d) Yes, non-deliverable forward rates are always above spot rates

11) Let **S** be the spot rate, **rd** the domestic deposit rate, **rf** the foreign deposit rate, and **T** time to maturity. Which of the following is a formula for forward points? **(Indicate your answer by circling one of the following choices)**

   a) $S * (1+ rf *T)/ (1+ rd *T) * 10{,}000$

   b) $S * (1+ rd *T)/ (1+ rf *T) * 10{,}000$

   c) $S * \{ (1+ rf *T)/ (1+ rd *T) - 1 \} * 10{,}000$

   d) $S * \{ (1+ rd *T)/ (1+ rf *T) - 1 \} * 10{,}000$

12) The price of an AUD put USD call struck at 0.9500 is 0.0200 USD pips. If the spot rate is 1.0200 and the forward rate is 0.9900, then what is the price of an AUD call USD put struck at 0.9500? (Assume USD deposit rates are zero.)

13) Let the EURUSD spot rate be 1.3000 and the forward rate 1.2800. If a EUR put USD call has a strike of 1.2000 and a premium of 0.0390 in USD pips, then which of the following might be its premium in EUR% **(Indicate your answer by circling one of the following choices)**

   a) 3.00%

   b) 3.05%

   c) 3.25%

   d) 3.90%

14) The EURGBP spot rate is 0.8400. The one week outright is 0.8420 and the one month outright is 0.8480. Which of these options have the highest vega? **(Indicate your answer by circling one of the following choices)**

   a) 0.7480 EUR call expiring in one month

   b) 0.8480 EUR call expiring in one month

   c) 0.7400 EUR call expiring in one hour

   d) 0.8400 EUR call expiring in one hour

15) If EURUSD risk reversals are strongly negative (puts are favored over calls), then which of the following is true of the market implied EURUSD distribution? **(Indicate your answer by circling one of the following choices)**

   a) The distribution has fat tails relative to a lognormal distribution

   b) The distribution is skewed to the downside

   c) The mean of the distribution is lower

   d) Both b) and c) are true