**Week 1 Seminar Solutions**

1. Explain the following Extended Order Types.

**- Day Orders**: orders for trading during regular trading with options to extend to pre- or post-market sessions;

**- Non-routable**: there are a number of orders that by choice or design avoid the default rerouting to other exchanges, such as ‘book only’, ‘post only’, ‘midpoint peg’, ...;

**- Pegged, Hide-not-Slide**: orders that move with the midpoint or the national best price;

**- Hidden**: orders that do not display their quantity;

**- Iceberg**: orders that partially display their quantity (some have options so that the visible portion will automatically be replenished when it is depleted by less than one round lot);

**- Immediate-or-Cancel**: orders that execute as much as possible at the best price and the rest are cancelled (such orders are not re-routed to another exchange nor do they walk the book);

**- Fill-or-Kill**: orders sent to be executed at the best price in their entirety or not at all;

**- Good-Till-Time**: orders with a fixed lifetime built into them so that they will be cancelled if not executed by its expiration time;

**- Discretionary**: orders display one price (the limit price) but may be executed at more aggressive (hidden) prices;

2. Suppose the of the best bid price is and the best ask price is , their relative quantities posted at the bid shares and at the ask shares:

a. What is the spread?

b. What is the midprice?

c. What is the microprice?

d. If 500 shares buying LOs come at the best, what will happen to the midprice? What will happen to the microprice?

e. If 500 shares selling MOs come, what will happen to the midprice?

1. Midprice keeps same.

Microprice will increase.

1. The MOs will walk the book, buy side, and the midprice will decrease.