

## HW 7.1 Key

1. The bid and ask prices of stocks A and B are as follows:

Stock	Bid	Ask
A	60.75	61.25
B	94.50	95.50

You buy one share of stock A and sell two shares of stock B. The broker's commission is 0.4%. What is your net cash flow? [10 #04]

- [A] 126.75    B) 122.95    C) 124.21    D) 125.48    E) 128.02

$$\begin{aligned}\text{Net Inflow} &= -61.25(1.004) + 2(94.50)(0.996) \\ &= \boxed{126.749}\end{aligned}$$

2. The bid and ask prices of a share of a certain stock are as follows:

	Bid	Ask
June 1	97.50	98.25
December 1	83.25	84.00

The broker's commission is 16 on a purchase or sale. You bought 100 shares on June 1 and sold all 100 shares on December 1. What is your net loss on this transaction, ignoring interest? [10 #06]

- [A] 1532    B) 1391    C) 1426    D) 1462    E) 1497

$$\begin{aligned}\text{Net Inflow} &= [-100(98.25) - 16] + [100(83.25) - 16] \\ &= \boxed{-1532}\end{aligned}$$

3. Samantha buys 100 shares of a stock but changes her mind and immediately sells the stock. The broker's commission is 14 on a purchase or sale. Samantha lost 150 on this transaction. What was the difference between the bid and ask price per share? [10 #07]

☒ A) 1.22    B) 1.02    C) 1.12    D) 1.32    E) 1.42

$$\text{Net Inflow} = [-100A - 14] + [100B - 14] = -150$$

$$100A - 100B + 28 = 150$$

$$100(A - B) = 122$$

$$A - B = \boxed{1.22}$$

4. Steve bought 100 shares of stock on March 1 and sold the stock 6 months later. The bid and ask prices were as follows:

	Bid	Ask
March 1	62.50	62.75
September 1	76.00	76.50

The broker's commission was  $X\%$ . Steve's gains was 1243.14, ignoring interest. Determine  $X$ . [10 #08]

☒ A) 0.59    B) 0.54    C) 0.57    D) 0.61    E) 0.64

$$\text{Net Inflow} = -100(62.75)(1+X) + 100(76)(1-X) = 1243.14$$

$$-62.75 - 62.75X + 76 - 76X = 12.4314$$

$$X = \boxed{0.0059}$$

5. On January 1, 2010, Stock Z has a bid price of 98.5. The bid-ask spread is 1.5 and the commission rate is 0.5%. You purchase one share of Stock Z, and sell it 3 years later. At the time of sale, the bid-ask spread is 0.5. If you saw an annual effective yield of 4% on your investment, what was the ask price as the time of sale? [10c Example 3]

☒ A) 114.12    B) 111.91    C) 113.62    D) 117.54    E) 120.96

	B	A
1/1/10	98.5	100
1/1/13	$X - 0.5$	$X$

$$100(1.005)(1.04)^3 = (X - 0.5)(0.995)$$

$$X = \boxed{114.12}$$