

Introduction to Finance - II  
 Quiz 1 *January 22, 2019*

Read the questions carefully. Don't make them harder than they are! Answer succinctly and precisely. Show all of your work.

1. Suppose that we pull the following data from a source such as WRDS for 2 stocks, AMAT and MMM:

		AMAT		MMM		
		\$	Stock			
Date	Price	Dividend	Distribution*	Price	Dividend	Distribution*
20060930	31.55			176.15		
20061031	31.00	.15		87.25		1.0
20061130	25.75		0.25	87.15	0.40	

\* Number of additional new shares for every old share.

- (a) **(24 points)** What are the monthly returns that you can compute from these data? (Show the computations and returns.)

2. Suppose that you have a spreadsheet with a column of 10 years worth of these monthly returns in Excel. For example, you have 120 monthly returns on AMAT in Rows 3 through 122 in column C in your spreadsheet. You have computed the mean of these 120, and this mean is .0085, in Cell C125 in the spreadsheet. Column D contains the deviation of the return that month from the mean. For example, Cell D10 contains  $= C10 - \$C\$125$  (the return in row 10 minus the mean return).

- (a) **(10 points)** What will the mean of this new column D be?

- (b) **(14 points)** Now in Column E you put the element in Column D – squared. For example, Cell E10 contains  $=D10^2$  (the square of the value in Cell D10). What is the mean of these 120 terms – that is the average of the squared differences from the mean ? What is the interpretation / importance / meaning of this average?
- (c) **(10 points)** You have the mean of Column E in cell E125. How do you compute the standard deviation of monthly returns?
- (d) **(13 points)** Suppose you computed the mean of the monthly MMM returns to be 0.0080. And the standard deviation of the monthly returns is .087. What is the 95%ile range of the annual returns on MMM under the assumption that its returns are normally distributed?

3. Suppose that on June 23, 2017, Huntington Ingalls Industries, HII, had a stock price of \$200 and 50 million outstanding shares.
- (a) **(5 points)** What is the market capitalization of HII on June 23, 2017?
- (b) **(12 points)** On June 24, 2017 HII split its stock 4-for-1 (the factor to adjust shares is 3—for every share you own you receive 3 additional shares). The stock return on June 24, 2017 is 0. What is the closing stock price of HII on June 24, 2017? What is HII's equity market capitalization on June 24, 2017?
- (c) **(12 points)** On June 25, 2017, HII pays a 50 cent dividend. Its return on 25, 2017 is 5%. What is the closing stock price of HII on June 25, 2017? What is HII's equity market capitalization on June 25, 2017?