

Fin 441
Homework # 1 (100 Points)
DUE WEDNESDAY, JULY 8th, 5:00 PM

Do not use Excel Spreadsheet for homework. You must show calculations in detail to earn credit. Homework must be printed with one-inch margin on all sides. No hand-written copy is accepted and graded. EMAIL A PDF (NOT WORD) COPY TO THE INSTRUCTOR BEFORE DEADLINE.

1. Consider an option that expires in 72 days. The bid and ask discounts on the T-bill are 7.44 and 7.20, respectively. Find the appropriate risk-free rate.

The following option quotes are observed for XYZ stock on Jul 3. Use this table for questions 2 through 6. Current stock price is 165.13. The expirations are Jul 17, Aug 21, and Oct 16. The risk-free rates are 0.0516, 0.0550, and 0.0588, respectively.

	Calls			Puts		
Strike	Jul	Aug	Oct	Jul	Aug	Oct
155	10.50	11.80	14.00	0.20	1.25	2.75
160	6.00	8.10	11.10	0.75	2.75	4.50
165	2.70	5.20	8.10	2.35	4.70	6.70
170	0.80	3.20	6.00	5.80	7.50	9.00

2. Compute the intrinsic values, time values, and lower bounds of the following **calls**. Treat these as **American** for purposes of determining the intrinsic values and time values and as **European** for the purpose of determining the lower bounds.
- July 160
 - October 155
 - August 170
3. Compute the intrinsic values, time values, and lower bounds of the following **puts**. Treat these as **American** for purposes of determining the intrinsic values and time values and as **European** for the purpose of determining the lower bounds.
- July 165
 - August 160
 - October 170
4. Check the following combinations of puts and calls, determine whether they conform to the **put-call parity rule** for **European** options, and identify violations, if any.
- July 155
 - August 160
 - October 170
5. Examine the following pairs of **American calls** which differ only by exercise price. Determine whether the rules regarding relationship between **American calls** that differ only by exercise price are violated.
- August 155 and 160
 - October 160 and 165
6. Examine the following pairs of **American puts** which differ only by exercise price. Determine whether the rules regarding relationship between **American puts** that differ only by exercise price are violated.
- August 155 and 160
 - October 160 and 170