**CS 6363: Design and Analysis of Algorithms – Fall 2019**
**Homework #5 – Due: November 18**
**Professor D.T. Huynh**

**Problem #1**. Design an $O(nlgn)$ algorithm to compute for a set of $n$ points a pair of points that have maximum slope.

**Problem #2**. Do Problem # 33.2-6 in [CLRS], page 1028.

**Problem # 3**. Design an algorithm to compute for two complex numbers $(a+bi)$, $(c+di)$ the product $(a+bi)(c+di)$ using only 3 multiplications.

**Problem #4**. Do Problem # 30.1-7 in [CLRS], page 906.

**Problem #5**. Compute the DFT of the following vectors over **C** (= field of complex numbers):

1. $(2, 4, 6, 8)$
2. $(1, 3, 2, 4, 3, 1, 2, 0)$

**Problem #6**. Do Problem #33.3-3 in [CLRS], page 1038.