Homework 6
MTH 3210 Probability and Statistics
Due Thu., Apr. 11

Unless stated otherwise, you must **show your work** to receive full credit.

Read These Sections of the Book	Then Do These Problems
4.2	11, 13, 14, 15, 21
4.3	Problem 1 (below), 34, 46, 53

1. Two major college readiness tests are the ACT and the SAT. The mean ACT score is **20.8** and the standard deviation is **4.8**. The mean SAT score is **1026** and the standard deviation is **209**.

   (a) Jack scored **27** on the ACT. Convert his ACT score to a **z-score**. What does the z-score say about Jack's ACT score?

   (b) Jill scored **1444** on the SAT. Convert her SAT score to a **z-score**. Who performed better, Jack or Jill?

   (c) SAT scores are normally distributed. Using the **the Empirical Rule** (i.e. the **68-95-99.7 Rule**), what **proportion** of SAT scores are higher than Jill's?