Quantitative Reasoning 28:
The Magic of Numbers

Homework 13

Assigned on Wednesday October 24th
Due at 12 noon Friday October 26th

Please submit problem sets at the end of the relevant lecture, or leave in the box labeled QR28 outside the Math Department's main office, on the third floor of the Science Center (Room 325).

Reading:

Gross-Harris, Chapter 11

Problems:

Please explain your reasoning and show your work.

1. Factor the following into prime numbers:

    (a) $\binom{20}{6}$; (*Hint:* You do not need to compute the actual number.)

    (b) 6006;

    (c) 2006.

2. (a) Is $\binom{19}{7}$ divisible by 13?

    (b) Is $\binom{19}{7}$ divisible by 19?

    (c) Is $\binom{19}{7}$ divisible by 23?