QUIZ 3   (MATH 61, SPRING 2015)

Your Name: --------------------------------------

UCLA id: -------------------------------------

Math 61 Section: -----------

Date: ----------------------

The rules:

This is a multiple choice quiz. You must circle exactly one answer with an ink pen.
If two or more answers are circled, the answer is not accepted.
You are allowed to use only this paper and pen/pencil. No calculators.
No books, no notebooks, no web access. You MUST write your name.

Points: (10 per correct answer)

Question 1. The number of 8-subsets of $\{1, 2, \ldots, 11\}$ is equal to:

$$\binom{11}{1} \qquad \binom{11}{2} \qquad \binom{11}{3} \qquad \binom{11}{4} \qquad \binom{11}{5} \qquad \text{none of these}$$
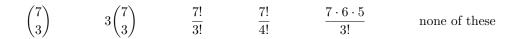
Question 2. The binomial coefficient $\binom{12}{5}$ is equal to:

$$\binom{12}{3} + \binom{12}{4}, \;\; \binom{11}{2} + \binom{11}{3}, \;\; \binom{11}{3} + \binom{12}{4}, \;\; \binom{11}{4} + \binom{11}{5}, \;\; \binom{13}{5} - \binom{13}{4}, \;\; \text{none of these}$$

Question 3. The number of permutations of $\{1, 3, 5, 7, 9\}$ which start with 5 is equal to

$$5! \qquad 4! \qquad 3! \qquad 9!/5 \qquad 7!/7 \qquad 3! \cdot 2 \qquad \text{none of these}$$

Question 4. There are 7 people in the weightlifting finals $\{A, B, C, D, E, F, G\}$. The number of ways to select Gold, Silver and Bronze medal winners, is equal to

$$\binom{7}{3} \qquad 3\binom{7}{3} \qquad \frac{7!}{3!} \qquad \frac{7!}{4!} \qquad \frac{7 \cdot 6 \cdot 5}{3!} \qquad \text{none of these}$$

Question 5. The probability that a random permutation $(\sigma(1), \sigma(2), \ldots, \sigma(9))$ in S_9 has $\sigma(1) > \sigma(2) < \sigma(3)$ is equal to

$$1/9! \qquad 1/3! \qquad 1/2! \qquad 0 \qquad 2/3 \qquad 1/3 \qquad 1/9 \qquad \text{none of these}$$