

Math 301

Quiz 10

10 points possible. Leave the appropriate symbols $\binom{n}{r}$ in your answers.

1. (5 pts.) The United States Senate is considering Senate Resolution 108, a resolution to designate the month of March as “National Colorectal Cancer Awareness Month.” At this point in time, 35 of the 100 senators have cosponsored the resolution, and 65 have not. A committee of six is to be chosen.

(a) How many committees of six can be formed from the membership of the senate?

(b) How many of the committees will contain at least three senators who have cosponsored SR108?

2. (5 pts.) (a) How many distinguishable ways can the letters of the word *MILLIONAIRE* be arranged?

(b) How many distinguishable arrangements of the letters of *MILLIONAIRE* contain the three letters *EAR* next to each other in that order?