

Preparation for Test #2F

1) A bag contains 4 blue marbles (one of which has a black stripe), 7 red marbles, and 3 yellow marbles. If 3 marbles are selected at random, what is the probability of choosing the striped marble and exactly one red marble?

2) Four boys and 3 girls are randomly seated in a “row” (actually a column) of 7 desks. What is the probability that all of the girls sit in front of all of the boys?

3) Find and simplify the term containing x^6 in the expansion of $(2x^2 - y)^8$.

4) Forty-five percent of Austinites are Democrats, 41% are Republicans, and 14% are Independents. If 8 Austinites are selected at random, what is the probability that no more than 2 are Independents?

5) What is the probability that a positive 4-digit integer is an even number containing only the digits 0, 1, 2, 3, 4, and 7?

6) Simplify: $\frac{{}_n P_{k-1}}{{}_n C_k}$