

Elizabeth Van Dusen
 math 301
 2/24/12

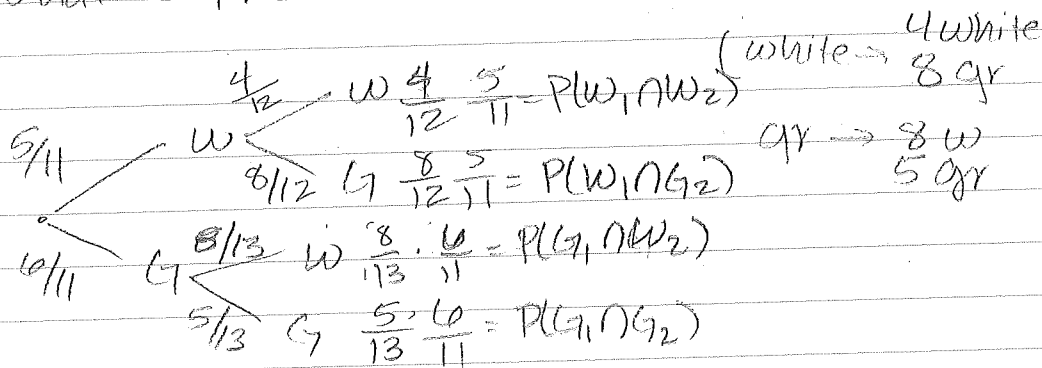
25) How many words are possible with no 2 Y's next to each other? (XX YYY ZZW)

There are $\binom{5}{2,2,1}$ ways to arrange 'XXZZW'.

Next we need to insert the Y's so none are next to each other. There are 10 locations to place the Y's; (one each at the beginning and end, and four between the letters). We need to choose 3 different locations for the Y's, and there are $\binom{10}{3}$ ways to do so.

Then there are $\binom{5}{2,2,1} \binom{10}{3}$ possible words.

26) a. What is $P(\text{1st ball white} | \text{2nd ball green})$?



$$P(W_1 | G_2) = \frac{P(W_1 \cap G_2)}{P(W_1 \cap G_2) + P(G_1 \cap G_2)} = \frac{\frac{8}{12} \cdot \frac{5}{11}}{\frac{8}{12} \cdot \frac{5}{11} + \frac{5}{13} \cdot \frac{6}{11}}$$

$$b. P(G_1 | W_2) = \frac{P(G_1 \cap W_2)}{P(G_1 \cap W_2) + P(W_1 \cap W_2)} = \frac{\frac{8}{13} \cdot \frac{6}{11}}{\frac{8}{13} \cdot \frac{6}{11} + \frac{4}{12} \cdot \frac{5}{11}}$$