

Review Qs

Note Title

3/8/2016

(#7 on Review #2)

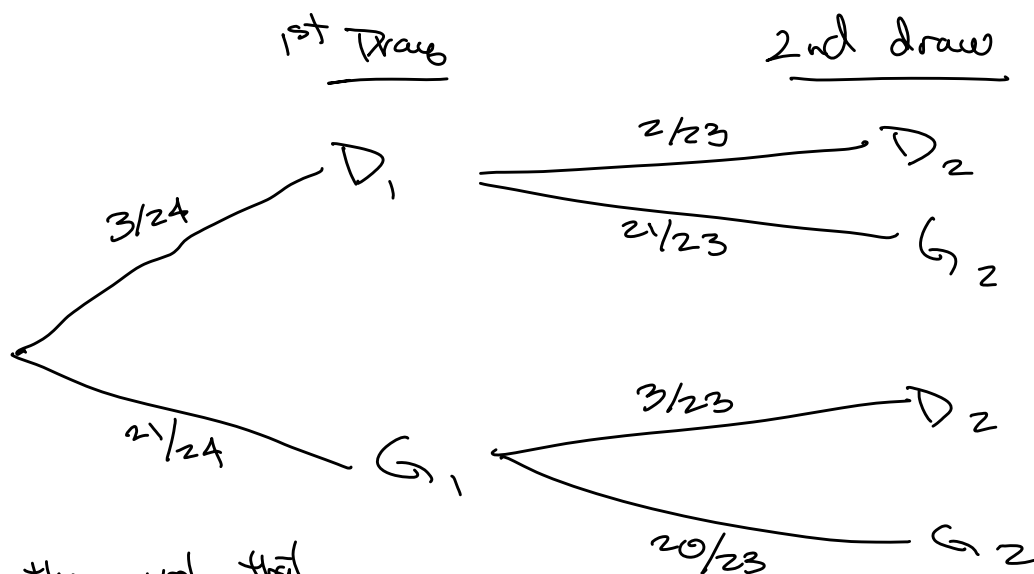
Example: A carton of 24 light bulbs includes 3 that are defective. We choose 2 bulbs at random without replacement:

$DD \rightarrow D$
 $GGGGGG \rightarrow G$
 $GGGGGG \rightarrow G$
 $GGGGGG \rightarrow G$

D : Defective

$D^c = G$: good (non-defective)

3 defective bulbs, so there must be $24 - 3 = 21$ good bulbs



a) What is the prob. that neither bulb is defective.

$$P(G_1 \cap G_2) = \frac{21}{24} \cdot \frac{20}{23} = \frac{35}{46}$$



b) Find prob. that exactly 1 bulb is defective



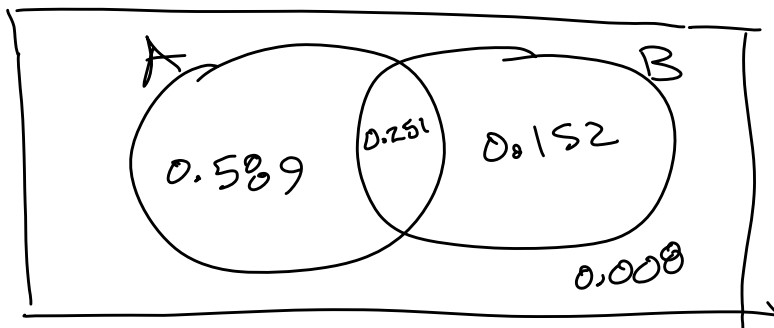
$$P(D_1 \cap G_2) + P(G_1 \cap D_2)$$

$$= \frac{3}{24} \left(\frac{21}{23} \right) + \frac{21}{24} \left(\frac{3}{23} \right)$$

Review # 2 , Prob # 8

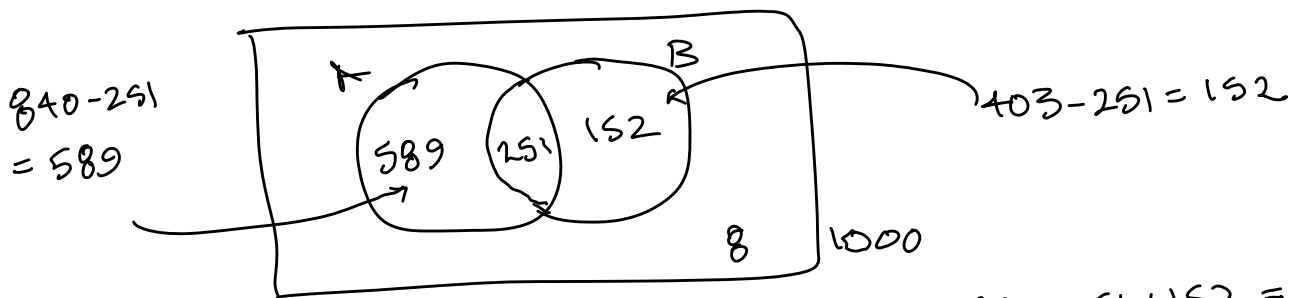
Given

$$P(A) = 0.840, P(B) = 0.403, P(A \cap B) = 0.251$$



Probability Venn Diagram

We could think of this as a frequency Venn diagram:



$$n(A \cup B) = 589 + 251 + 152 = 992$$

$$1000 - 992 = 8$$

$$P(A \cup B) = 0.589 + 0.251 + 0.152 = 0.992$$

Note:

using Addition Formula:

$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

$$= 0.840 + 0.403 - 0.251 = 0.992$$