

3G #2

$$P(B'|A') = \frac{P(B' \cap A')}{P(A')} = \frac{0.35}{0.75}$$
$$= \frac{7}{15}$$

#3. $P(S) = 0.48$

$$P(S \cap R) = 0.39$$

$$P(R|S) = \frac{0.39}{0.48} = \frac{13}{16}$$

#10 (a) $P(M \cap L) = \frac{5}{50} = \frac{1}{10}$

(b) $P(R) = \frac{43}{50}$

$$(c) P(R|F) = \frac{P(R \cap F)}{P(F)} = \frac{\frac{11}{50}}{\frac{13}{50}}$$
$$= \frac{11}{13}$$

Conditional Probability

$$P(A|B) = \frac{P(A \cap B)}{P(B)}$$

Ex.

A = draw a 2nd club

B = draw a club

$$P(A|B) = \frac{12}{51}$$

Independent Events:

$$P(A \cap B) = P(A) \cdot P(B)$$

$$* P(J|K) = \frac{P(J \cap K)}{P(K)}$$

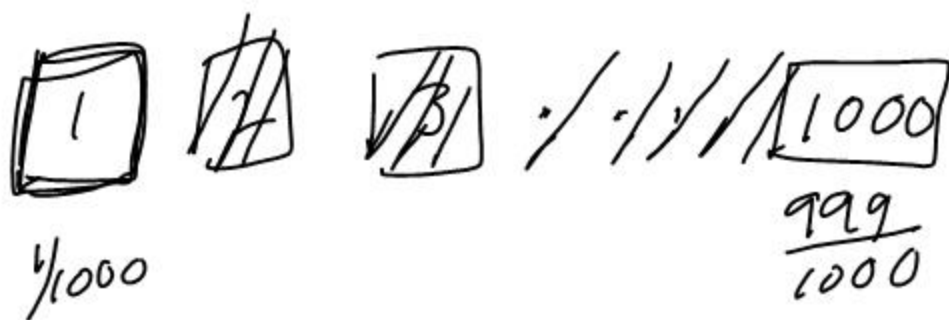
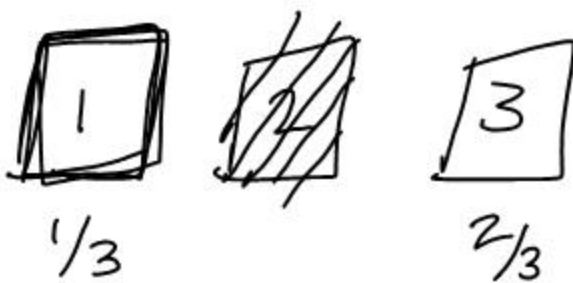
$$0.3 = \frac{P(J \cap K)}{0.5} \rightarrow P(J \cap K) = 0.15$$

$$* P(J \cap K) = P(J) \cdot P(K)$$
$$0.15 = P(J) \cdot 0.5$$
$$0.3 = P(J)$$

If A and B are independent,

then $P(A/B) = P(A)$

and $P(B/A) = P(B)$

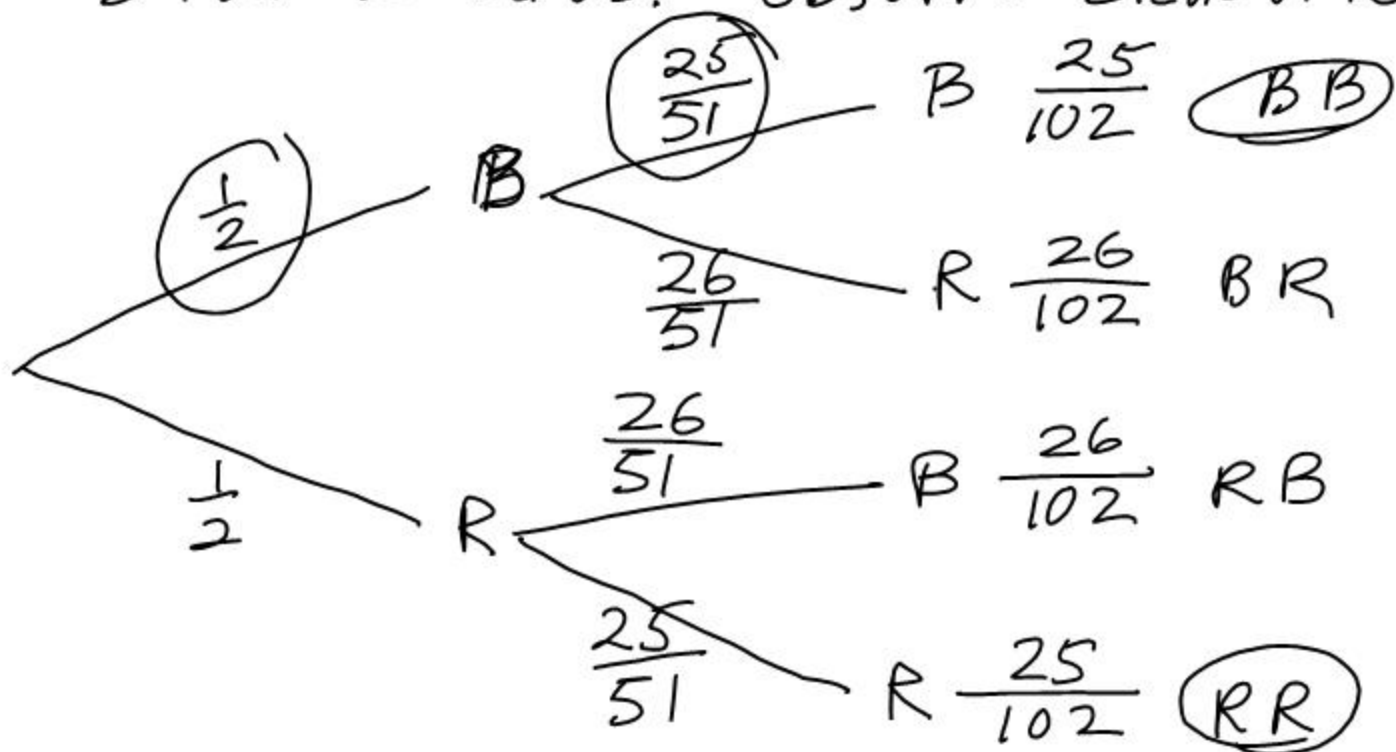


Classwork quiz 8/28

3G #5

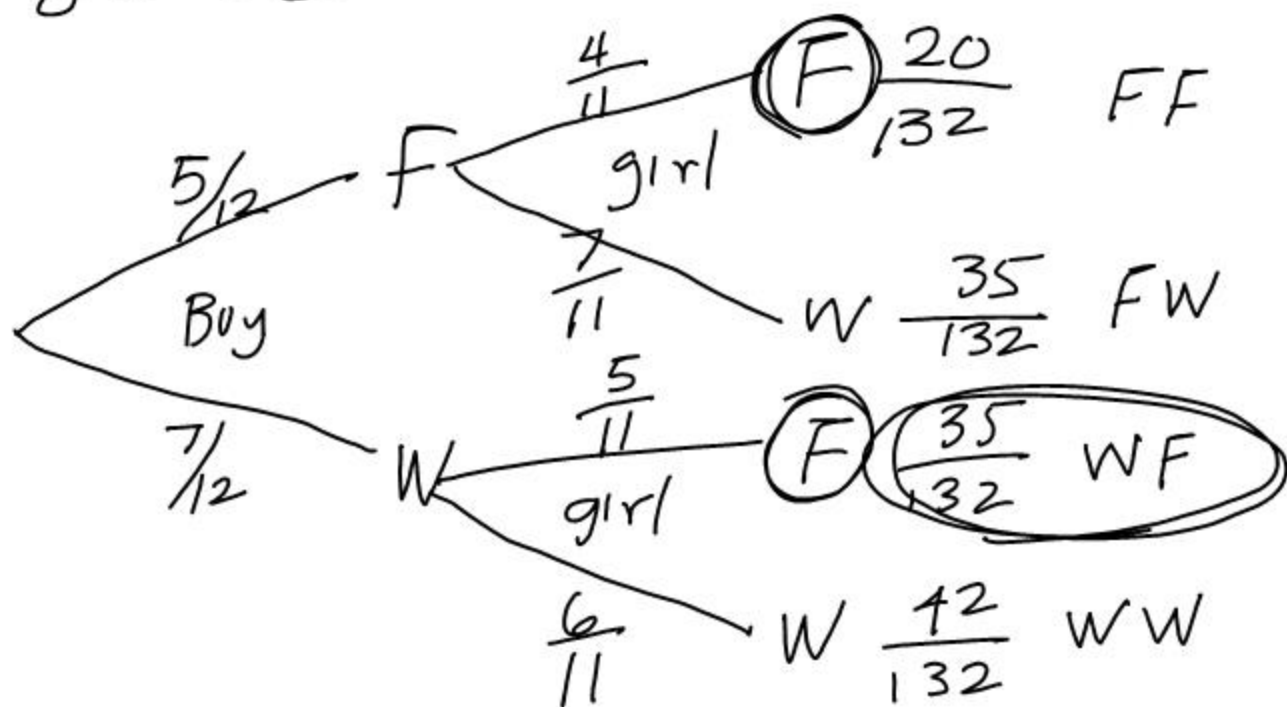
Probability Trees

Draw 2 cards. observe Black or Red



$$\begin{aligned} P(\text{both are the same color}) &= \frac{25}{102} + \frac{25}{102} \\ &= \frac{50}{102} \end{aligned}$$

3I #2



$$P(\text{1st is W} \mid \text{2nd is F}) = \frac{P(\text{1st W} \cap \text{2nd F})}{P(\text{2nd F})}$$

$$= \frac{35/\cancel{132}}{55/\cancel{132}} = \frac{7}{11}$$

3H # 3-6

3I # 3, 5