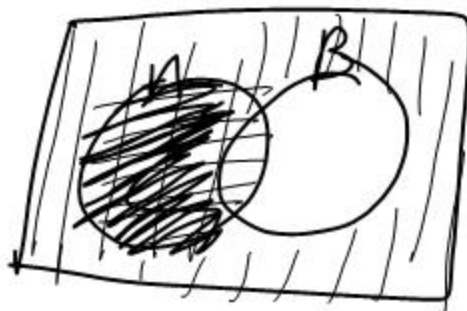
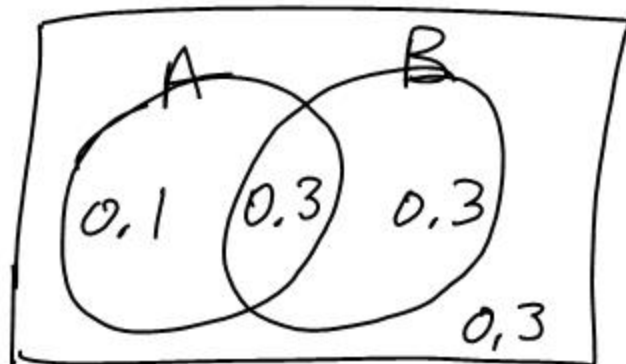


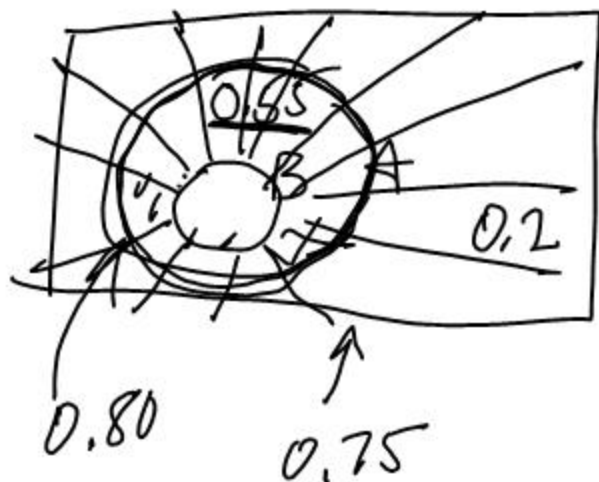
64

#1



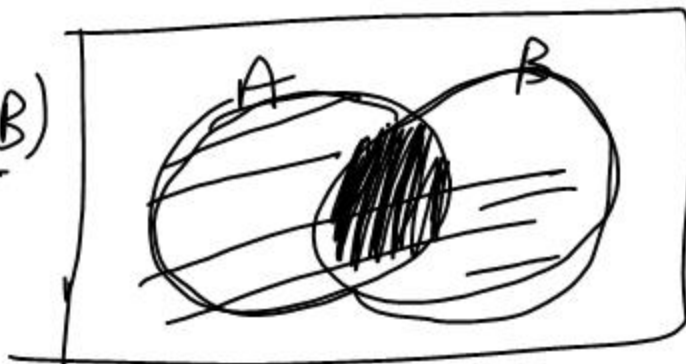
#2

A: taller than 160
B: taller than 180

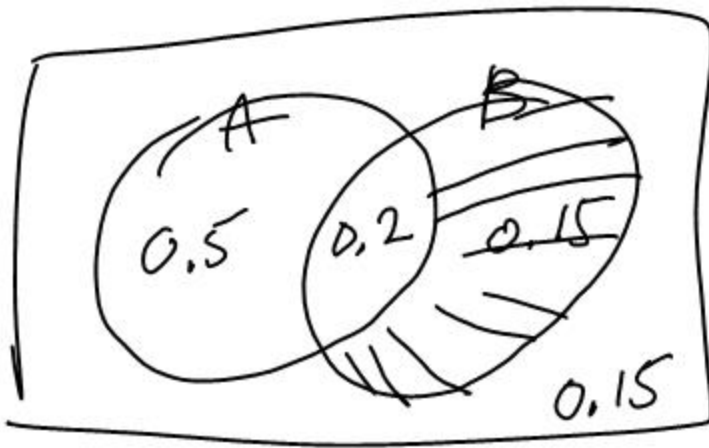


$$A' \cup B' = (A \cap B)'$$

$(A \cup B) \setminus (A \cap B)$



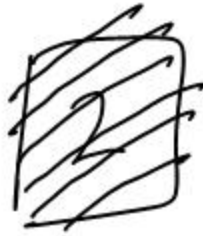
HA



Monty Hall Problem



$\frac{1}{3}$



$\frac{2}{3}$



$\frac{1}{1000}$

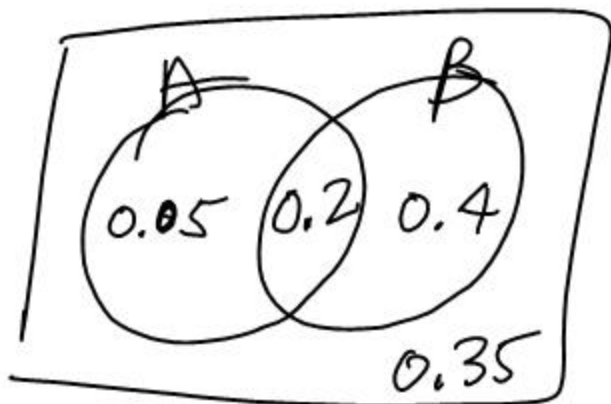


...



$\frac{999}{1000}$

6J
#2.



$$\begin{array}{r} 0.25 \\ 0.60 \\ \hline 0.85 \\ 0.65 \\ \hline 0.2 \end{array}$$

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

$$= \frac{0.2}{0.6} = \frac{2}{6} = \frac{1}{3}$$

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

#7

$$P(U \cap V) = 0$$

$$P(U \cup V) = P(U) + P(V)$$

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

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

HW quiz 8/29

Given: $P(A \cap B') = 0.1$

$$P(A' \cap B) = 0.4$$

$$P(A' \cap B') = 0.3$$

Find: • $P(A \cap B)$

• $P(A)$

• $P(B)$

GK #1

Independent Events

- $P(A \cap B) = P(A) \cdot P(B)$
 - $P(A|B) = P(A)$
 - $P(A'|B') = P(A')$
-

$$\left. \begin{array}{l} P(A \cap B) = 0.24 \\ P(A) \cdot P(B) = 0.24 \end{array} \right\} \begin{array}{l} A \text{ and } B \text{ are} \\ \text{indep.} \end{array}$$

$$\left. \begin{array}{l} P(B \cap C) = 0.15 \\ P(B) \cdot P(C) = 0.18 \end{array} \right\} \begin{array}{l} B \text{ and } C \text{ are} \\ \text{not indep.} \end{array}$$

$$\begin{aligned} P(A \cap C) &= P(A) + P(C) - P(A \cup C) \\ &= 0.4 + 0.3 - 0.82 \end{aligned}$$

#9
n draws

$$1 - P(\text{all evens})$$

$$1 - \underbrace{\frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} \cdots \frac{1}{2}}_{n \text{ indep. draws}} = 1 - \left(\frac{1}{2}\right)^n$$

$$1 - \left(\frac{1}{2}\right)^n \geq 0.92$$

$$\left(\frac{1}{2}\right)^n \leq 0.08$$
$$= 4$$

HW ~~6~~ K # 4 - 6, 10