

Quiz

$$P(A) = 0.5, \quad P(B) = 0.7, \quad P(A|B) = \frac{3}{7}$$

- prob of both: $P(A \cap B)$

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

$$\frac{\cancel{1}}{10} \cdot \frac{3}{\cancel{7}} = \frac{P(A \cap B)}{\cancel{0.7}}$$

$$\boxed{0.3 = P(A \cap B)}$$

- (b) prob of at least 1

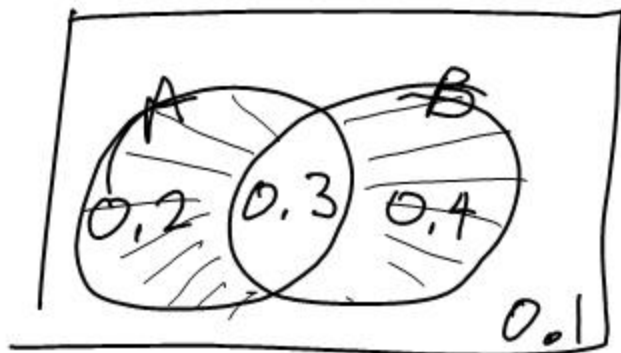
$$* P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

$$= 0.5 + 0.7 - 0.3$$

$$= \underline{0.9}$$

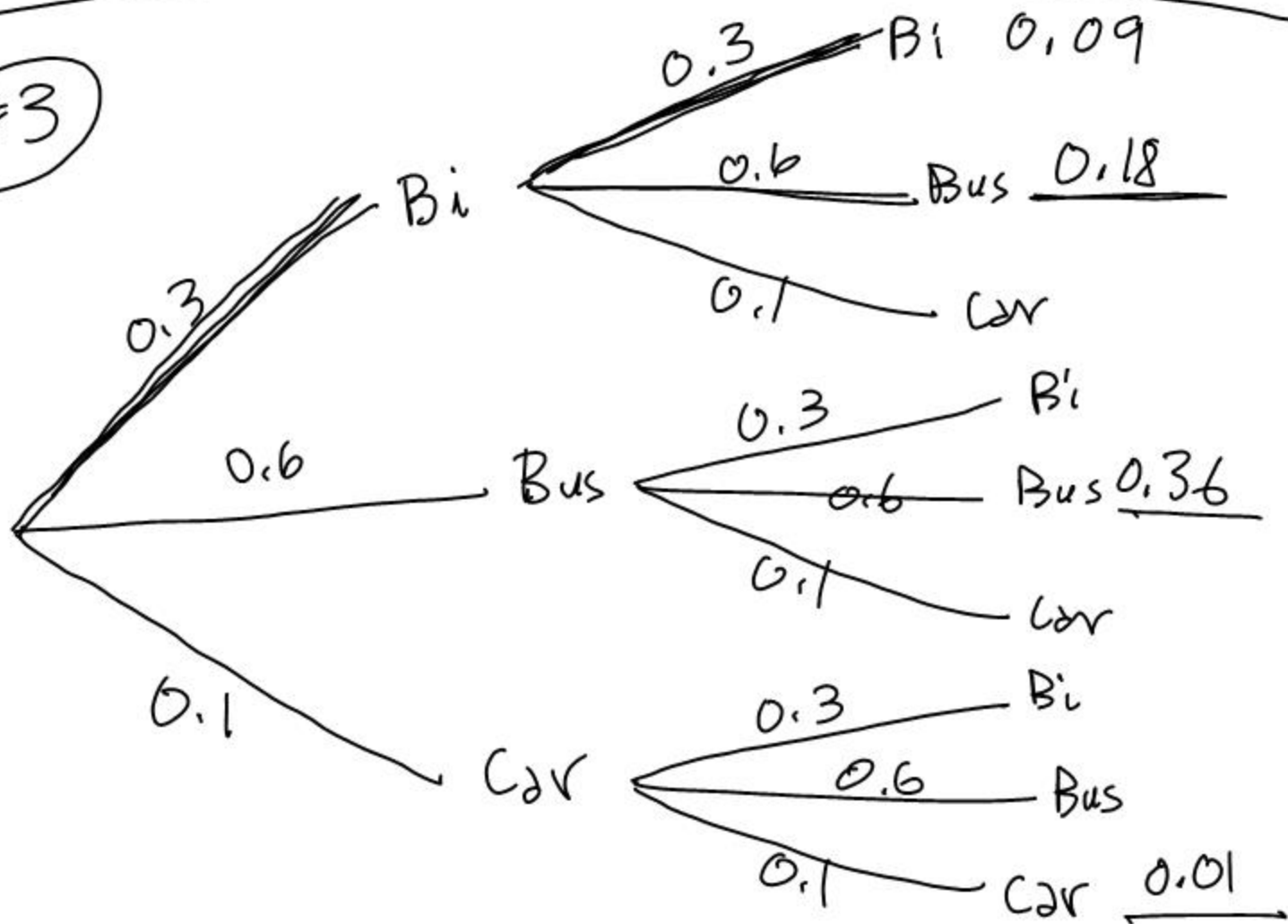
(c) prob of exactly 1

$$0.2 + 0.4 = \underline{0.6}$$



$$(d) P(B|A) = \frac{P(B \cap A)}{P(A)} = \frac{0.3}{0.5} = \frac{3}{5}$$

(#3)



$$(C) \quad \underbrace{(0.7) (0.7) (0.7)}_{P(A) \cdot P(B) \cdot P(C)} = \underline{0.343} = P(A \cap B \cap C)$$

A = No bike on W

B = " " " Th

C = " " " F

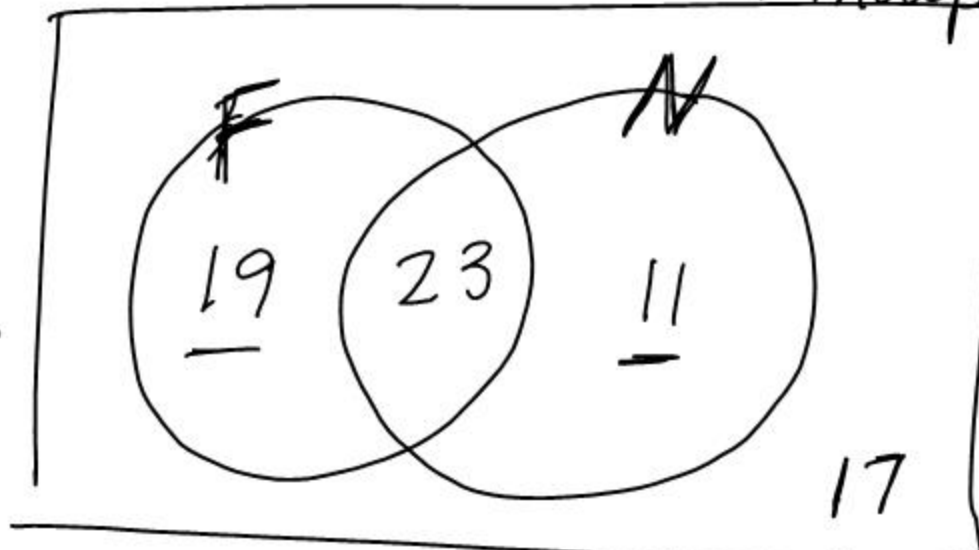
Independent Events: $P(A \cap B) = P(A) \cdot P(B)$

$$P(F) \cdot P(N') = \frac{47}{70} \cdot \frac{36}{70} = \frac{423}{1225} \quad \Bigg| \quad \begin{array}{l} P(F \cap N') \\ 19/70 \end{array}$$

Not independent

#5

$$\begin{array}{r} 42 \\ -23 \\ \hline 19 \end{array} \quad \begin{array}{r} 19 \\ 23 \\ \hline 11 \\ 33 \end{array}$$



(a) $\frac{11}{70}$ (b) $P(F|N') = \frac{P(F \cap N')}{P(N')} = \frac{19/70}{36/70}$