Solve $P(A_2 | A_1) = \frac{P(A_1 \cap A_2)}{P(A_1)}$

$A_1 = 0.22$

$A_2 = 0.25$

$A_3 = 0.28$

$\frac{0.07}{0.22}$

NOT INDEPENDENT

$\frac{P(A_1 \cap A_2)}{P(A_1)} = \frac{0.07}{0.22}$

$\frac{P(A_2 \cap A_3)}{P(A_1)} = \frac{0.08}{0.22}$

$P(A_2 \cap A_3 | A_1)$

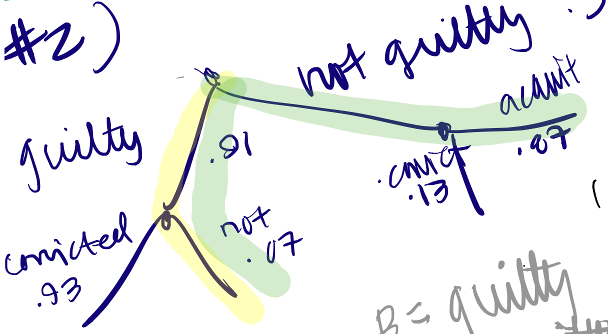
$\frac{P(A_1 \cap A_2 \cap A_3)}{P(A_1)} = \frac{0.01}{0.22}$

c) $P(A_2 | A_1) = \frac{P(A_1 \cap A_2)}{P(A_1)}$

$P(A_2 \cup A_3 | A_1) = \frac{P(A_1 \cup A_2) \cap A_3}{P(A_1)}$

$\frac{A_1 \cap A_2 + A_1 \cap A_3}{A_1}$

#2)



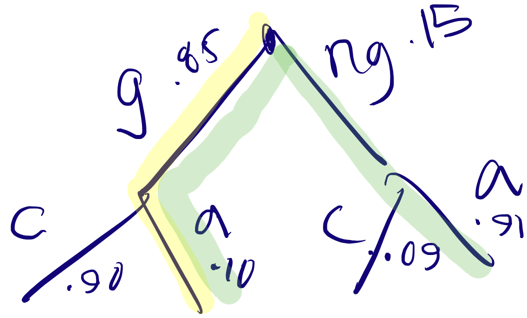
$\boxed{P(B|A)}$

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

B = guilty

A = acquitted

$\frac{0.0637}{.91}$



$.85 * .10 + .15 * .91$

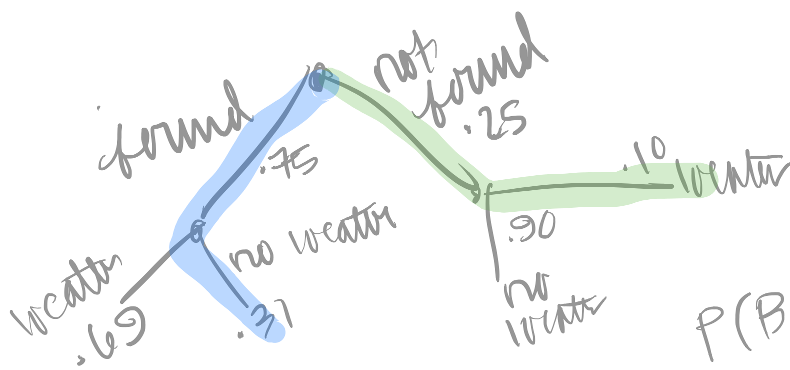
0.2215

P(random acquitted) =

$P(G) \cdot P(A|G) + P(G')P(A|G')$

$.91 * 0.0637 + .9 \cdot .783$

#3) - aircraft disappear in flight discovered
- have weather



P(B|A)

P(B|A)

$P(D) = .75$
$P(L|D) = .69$
$P(NL/ND) = .9$

$$P(ND) = \frac{P(L/ND) = P(ND)}{P(L)}$$

$1 - P(D) =$

$1 - .75$

#4) $P(A) = .2$ INDEPENDENT } not successful
$P(B) = .4$

#5 a) gene 1 Dom?

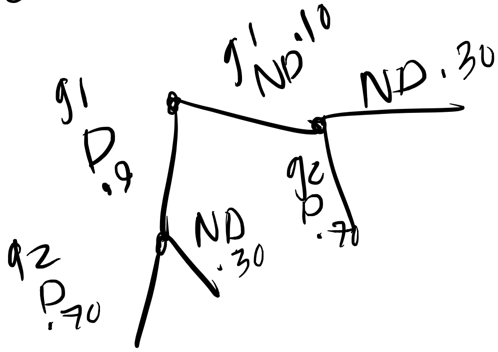
$54 + 6 = 60$

$\frac{54}{60} =$

b) $54 + 36 = 90$

$54/90 =$

c) P(B? | given A)



$\frac{54}{90}$ ← dominant total

$_{90}C_{54}$

$\frac{90}{54(90-54)}$ $\frac{90}{54 \cdot 36}$

Solve $(A \cap B)$

A = 1st board green

B = 2nd board green

20% boards (2000) green

$\frac{2000}{10000} \cdot \frac{1999}{9,999}$

$P(A) \times P(B|A) = P(A \cap B)$

→ $P(B|A) = P(B)$ if independent