b) P(Good Risk / No accident) we need to

pain

$P(\text{accident}) = 0.27$

$P(\text{no accident}) = 1 - P(\text{accident}) = \underline{\underline{0.73}}$

$$P(\text{Good Rider} \mid \text{no accident}) = \frac{P(1 - P(\text{accident} \mid \text{Good Rider})) * P(\text{Good Rider})}{P(\text{no Accident})}$$

$$= \frac{(1-0.1) * 0.2}{0.73}$$

$$= \underline{\underline{0.24}} \approx \Rightarrow 24\%$$

3) $P(\text{Bad Rol}) = \frac{5000}{15000} = 0.3$

$P(\text{Avergr Rul}) = \frac{4000}{15,000} = 0.26$

$P(\text{Fair Risk}) = \frac{3000}{15,000} = 0.2$

$P(\text{Good Risk}) = \frac{3000}{15,000} = 0.2$

$P(A / \text{Bad Rul}) = \frac{2000}{5000} = 0.4$

$P(A / \text{Avere Rol}) = \frac{1200}{4000} = 0.3$

$P(A / \text{Fair Risk}) = \frac{600}{3000} = 0.2$

$P(A / \text{Good Rol}) = \frac{300}{3000} = 0.1$

a)

$P(\text{Next Person med with Accident})$

$\Rightarrow \underline{0.3 \times 0.4} + 0.26 \times 0.3 + 0.2 \times 0.2 + 0.2 \times 0.1$

$= \underline{\underline{0.27}}$

b) $P(\text{Good Riskk} / \text{not Accident}) =$

$\left(= \frac{P(\text{Good Rok and Not Acciat})}{1 - 0.27} \right)$

$\left(= \frac{(1 - (0.2)(0.1))}{(1 - 0.27)} \right)$

$(=)$

PTO

$\Rightarrow {}^{100}C_9 * {}^{100}C_{11}$

because type A $(9 * 0.1) = 0.9$ mg, type B $(11 * 0.1) = 1.1$ mg $\Big\}$ which is not overdose — ①

$\Rightarrow {}^{100}C_{10} * {}^{100}C_{10}$

type A = $(10 * 0.1) = 1$ mg, type B $(10 * 0.1) = 1$ mg $\Big\}$ which is not overdose — ②

type A, type B

$\Rightarrow {}^{100}C_{11} * {}^{100}C_9$

Type A $11 * 0.1 = 1.1$ mg, Type B $9 * 0.1 = 0.9$ mg $\Big\}$ which is not overdose — ③

$\therefore$

$$\therefore = \frac{{}^{100}C_9 * {}^{100}C_{11} + {}^{100}C_{11} * {}^{100}C_9 + {}^{100}C_{10} * {}^{100}C_{10}}{{}^{200}C_{20}}$$

1> a) There are 4 right & 3 up ways to go to the ATM,

So,

UUURRRR

$^{4+3}C_4$ i.e

$= \underline{\underline{^7C_4}} = 35$ paths

b) To skip the canteen, we need

$\underset{\text{total}}{\underline{^7C_4}} - \left(^4C_2 \times ^3C_2 \right)$

2U & 2R → To canteen

2R & 1P → To ATM

$= 35 - [18]$

$= \underline{\underline{17}}$ ways/paths.

-> Each piece of tablet curresponds to 0.1 mg, So the Sample Space = { A_{11}, A_{12} ...... A_{10} ... A_{21} ... B_{200} }

likelihood $= \dfrac{1}{^{200}C_{20}}$

So to avoid overdosage,

Given condition

0.9 mg ≤ safe dosage ≤ 1.1 mg

Exact no of Intake = No of ways in which he has to pick the tablet without overdose