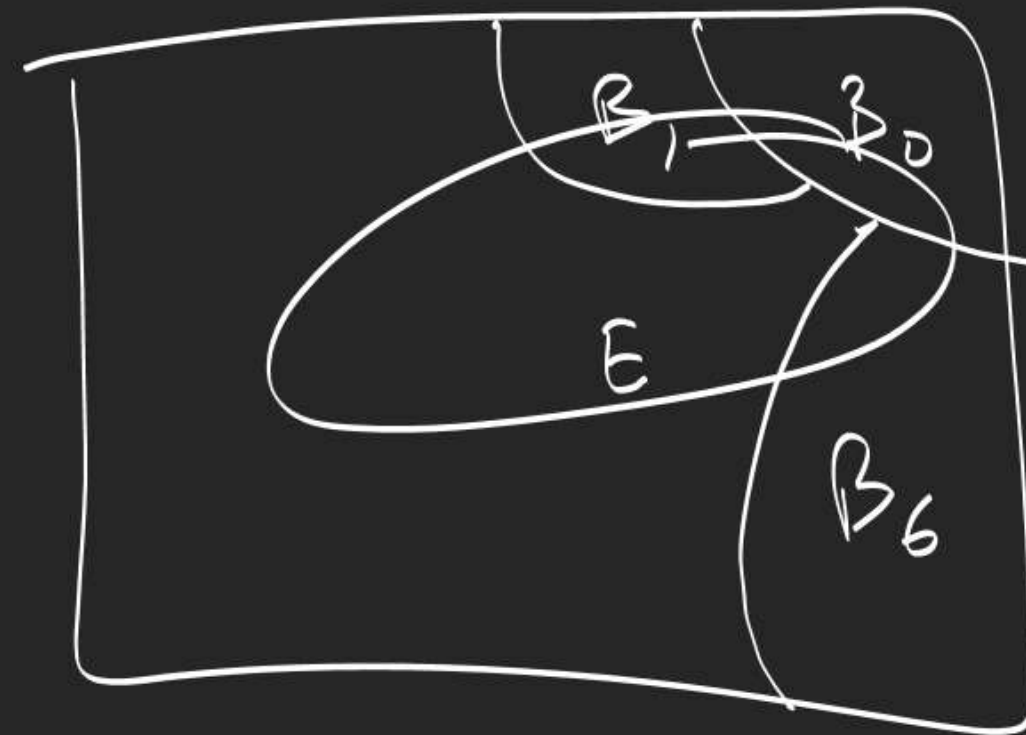


$$P(B_3/E) = \frac{\frac{1}{7} \times \frac{{}^3C_3}{{}^6C_3}}{\frac{1}{7} \left( 0 + 0 + 0 + \frac{{}^3C_3}{{}^6C_3} + \frac{{}^4C_3}{{}^6C_3} + \frac{{}^5C_3}{{}^6C_3} + \frac{{}^6C_3}{{}^6C_3} \right)}$$



2.  $H_2 \rightarrow 2^{\text{nd}}$  toss is head

$$P(H_2) = \sum_{i=1}^3 P(H_2 \cap (B_i/H_1)) = \frac{\frac{1}{3} \times \frac{1}{3}}{\frac{1}{3} \times (\frac{1}{3} + \frac{2}{3} + \frac{3}{4})} \times \frac{1}{3} + \frac{\frac{1}{3} \times \frac{2}{3}}{\frac{1}{3} (\frac{1}{3} + \frac{2}{3} + \frac{3}{4})} \times \frac{2}{3} +$$

$$\frac{\frac{1}{3} \times ((\frac{1}{3})^2 + (\frac{2}{3})^2 + (\frac{3}{4})^2)}{\frac{1}{3} \times (\frac{1}{3} + \frac{2}{3} + \frac{3}{4})} = \frac{23}{36}$$

$$P(B_3/H_1) = \frac{\frac{1}{3} \times \frac{3}{4}}{\frac{1}{3} (\frac{1}{3} + \frac{2}{3} + \frac{3}{4})}$$



$$P(B_1/H_1) = \frac{\frac{1}{3} \times \frac{1}{3}}{\frac{1}{3} (\frac{1}{3} + \frac{2}{3} + \frac{3}{4})}$$

$$P(B_2/H_1) = \frac{\frac{1}{3} \times \frac{2}{3}}{\frac{1}{3} (\frac{1}{3} + \frac{2}{3} + \frac{3}{4})}$$

3.

6R, 4W

4 balls drawn

at least two white

one more ball is drawn  
white.

$$\frac{{}^4C_2 {}^6C_2}{{}^{10}C_4} \times \frac{2}{6} + \frac{{}^4C_3 {}^6C_1}{{}^{10}C_4} \times \frac{1}{6} + \frac{{}^4C_4}{{}^{10}C_4} \times 0$$

$$\frac{{}^4C_2 {}^6C_2}{{}^{10}C_4} + \frac{{}^4C_3 {}^6C_1}{{}^{10}C_4} + \frac{{}^4C_4}{{}^{10}C_4}$$

$$= \frac{34}{115}$$

4.

1R, 2B (1)  $1 - \frac{1}{3} \times \frac{2}{4} \times \frac{3}{5} = \frac{9}{10} \rightarrow P(R_3 / R_1 \cap R_2)$

$\swarrow$   $\downarrow$   
 $P(R_1)$   $P(R_2 / R_1)$

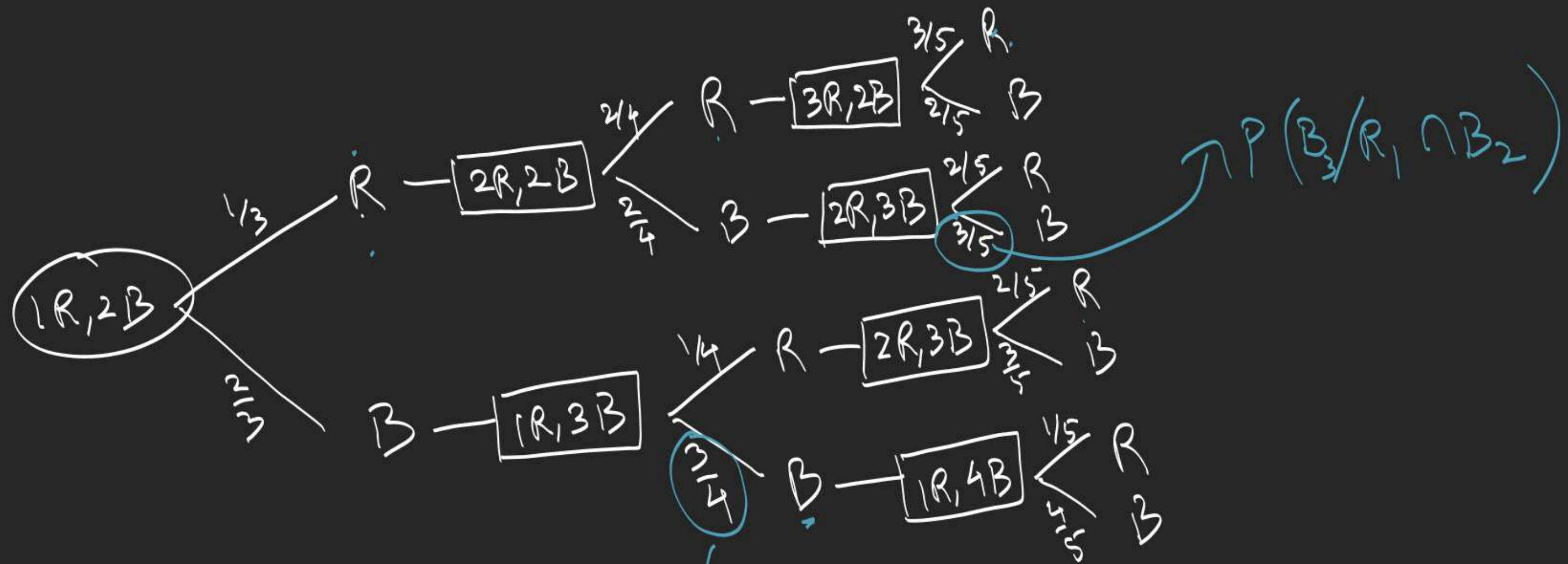
(2)  $P(BRR \text{ or } RBR \text{ or } RRB)$

$$= \frac{2}{3} \times \frac{1}{4} \times \frac{2}{5} + \frac{1}{3} \times \frac{2}{4} \times \frac{2}{5} + \frac{1}{3} \times \frac{2}{4} \times \frac{2}{5} = \frac{1}{5}$$

(3)

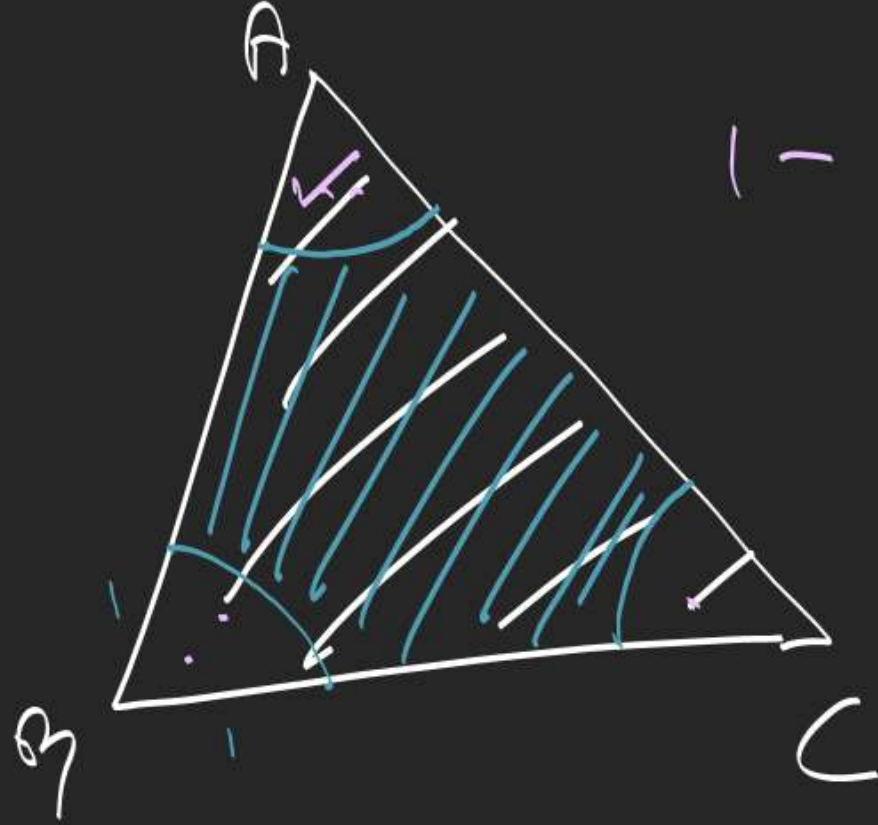
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$$\frac{\frac{1}{3} \times \frac{2}{4} \times \frac{3}{5}}{\frac{1}{3} \times \frac{2}{4} \times \frac{3}{5} + \frac{2}{3} \times \frac{3}{4} \times \frac{4}{5}} = \frac{1}{5}$$



$$\begin{aligned}
 & P(B_2/B_1) \\
 & P(R_1 \cap R_2 \cap R_3) = \underbrace{\frac{1}{3}}_{R_1} \times \underbrace{\frac{2}{4}}_{R_2/R_1} \times \underbrace{\frac{3}{5}}_{R_3/R_1 \cap R_2}
 \end{aligned}$$

5.



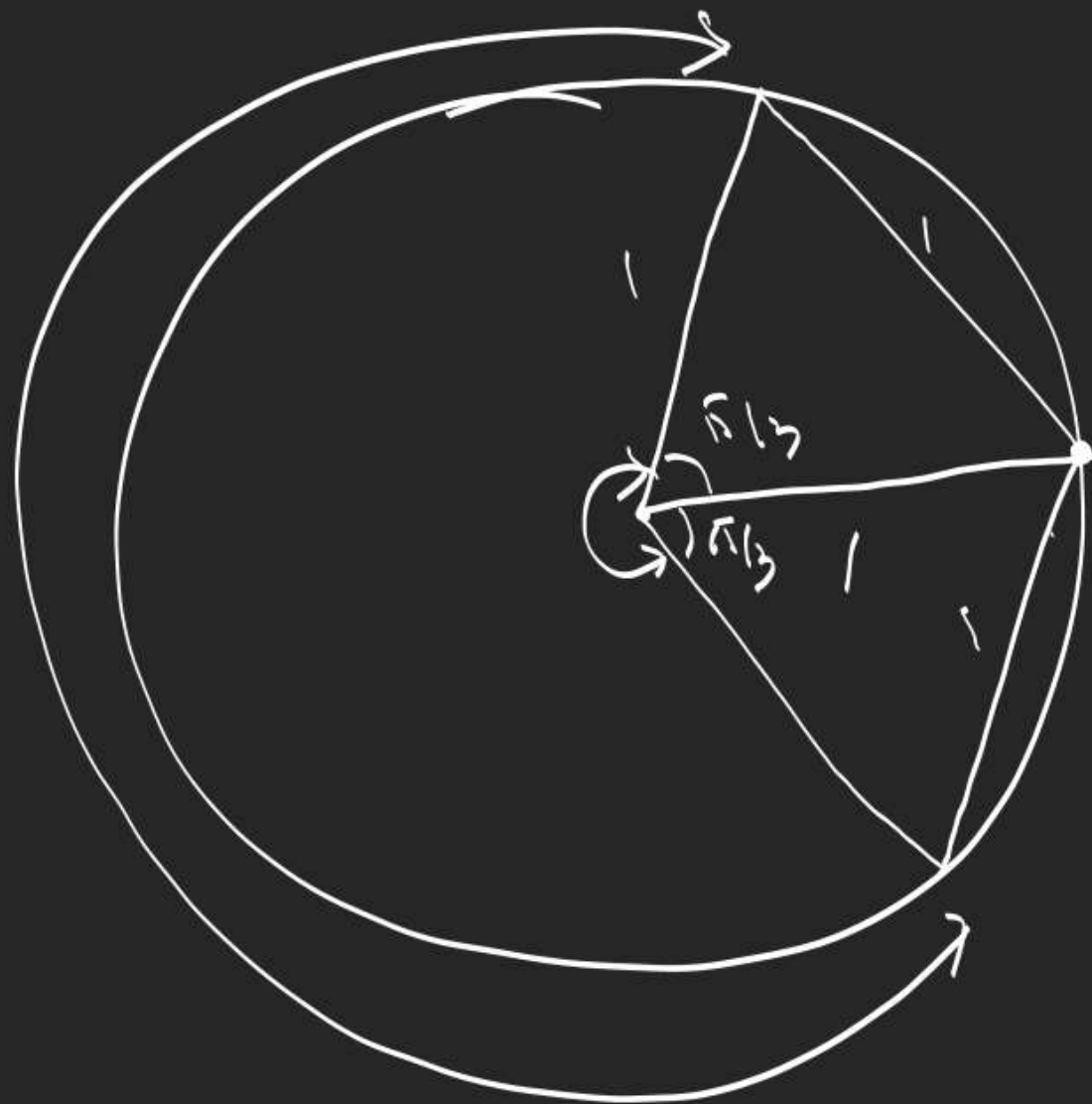
$$1 - \frac{\frac{1}{2} (1)^2 \frac{\pi}{3} \times 3}{\frac{\sqrt{3}}{4} (3)^2}$$

DPP-1 (Prob.)

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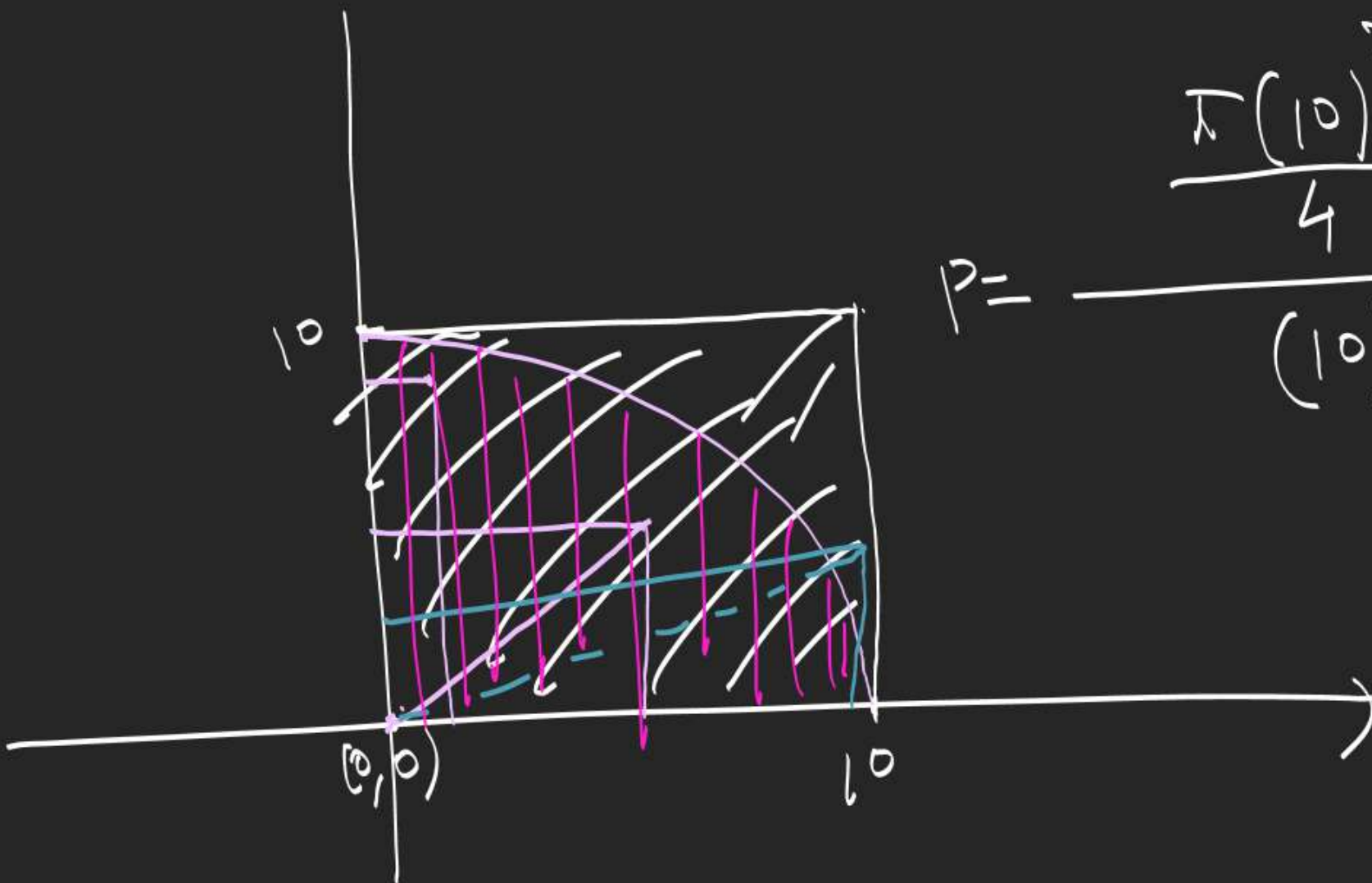
Ex-I (DE)

6.



$$P = \frac{4\pi}{3} = \boxed{\frac{2\pi}{3}}$$

7.



$$P = \frac{\frac{\pi (10)^2}{4}}{(10)^2} = \frac{\pi}{4}$$