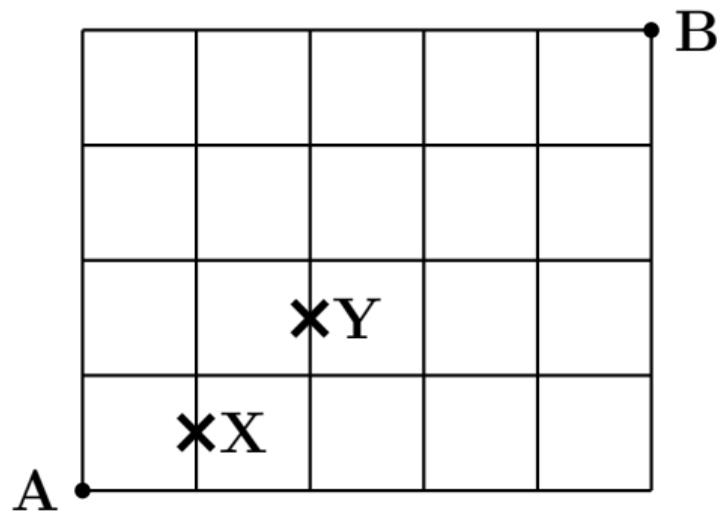


予備知識が必要

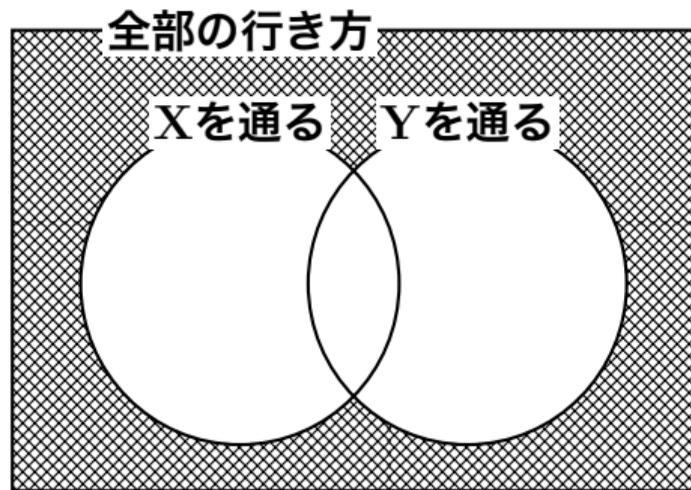
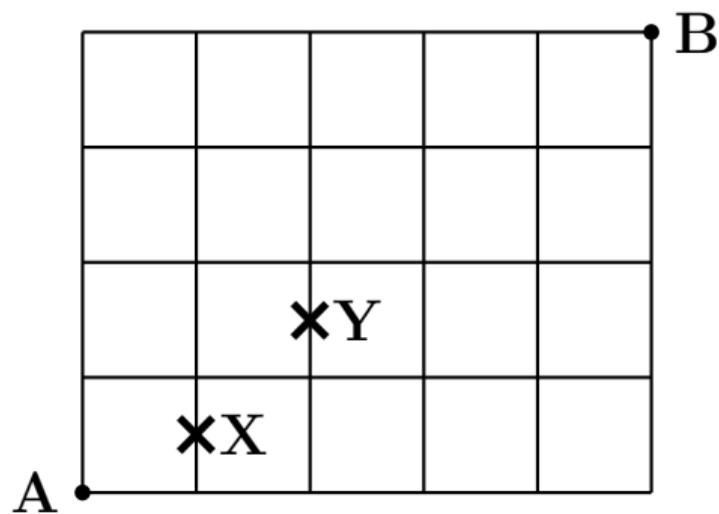
## 最短経路 ▶ web

理解できていますか？

# X と Y が通れない $A \rightarrow B$ 行き方何通り？ #13 ⑥

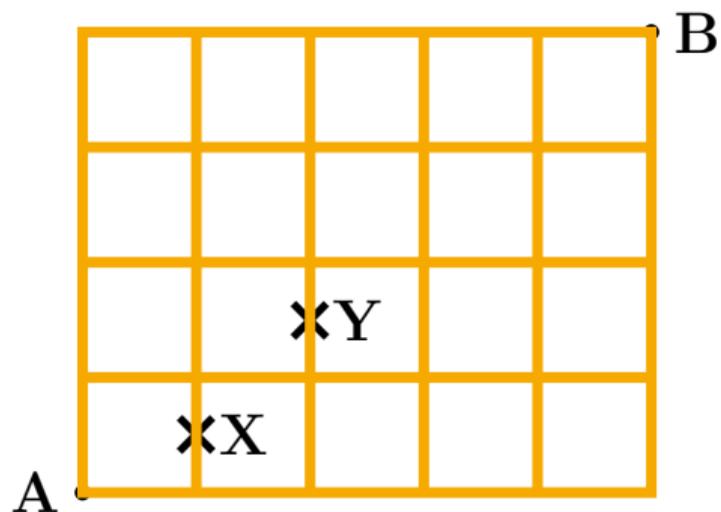


# X と Y が通れない A → B 行き方何通り？ #13 ⑥

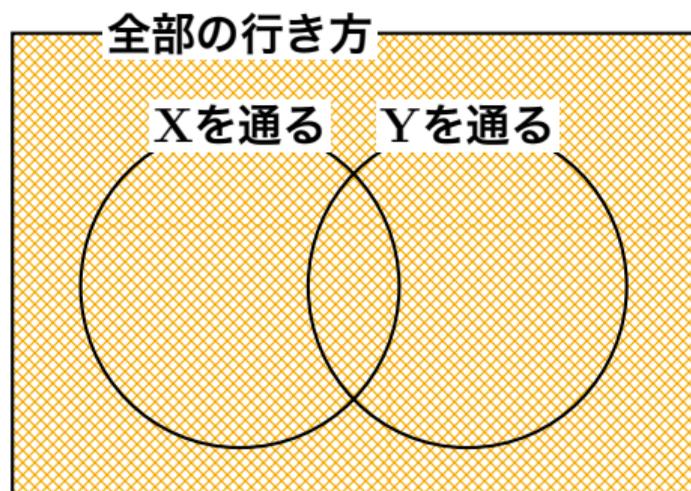


全部 - X を通る - Y を通る + X と Y 両方を通る  
を計算すればよい。

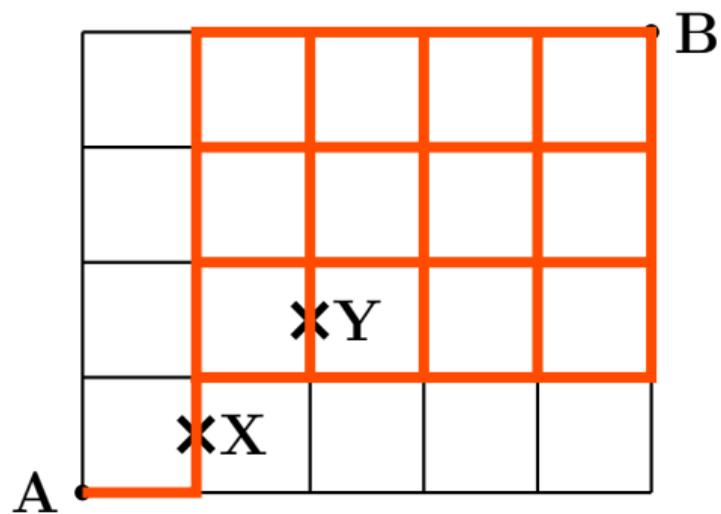
# 全部の行き方は



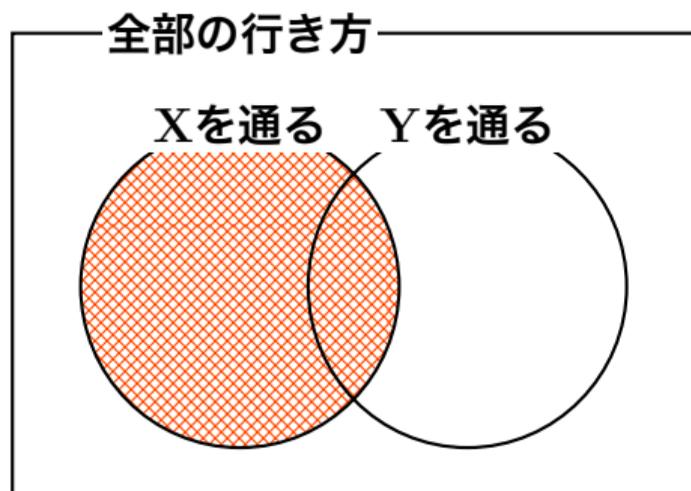
${}^9C_4$ 通り



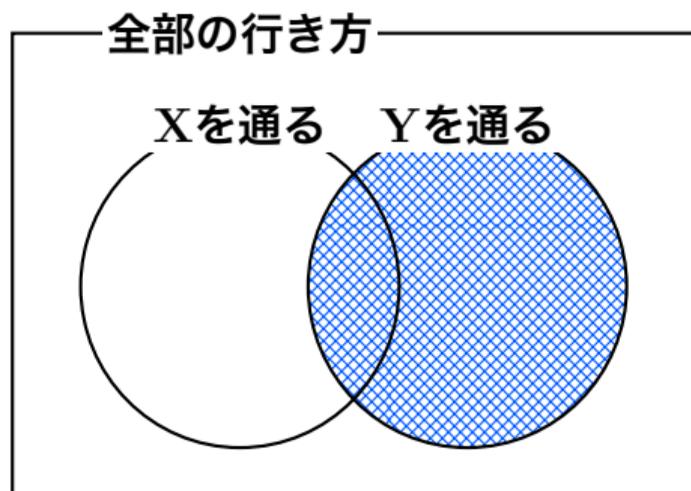
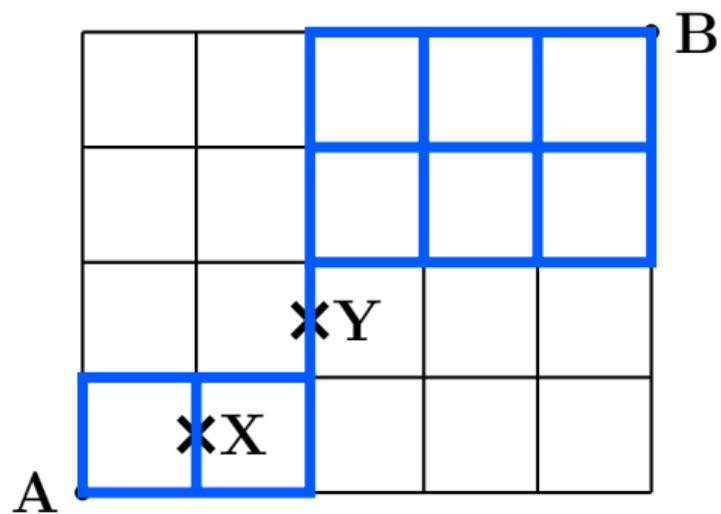
# X を通る行き方は



${}^7C_3$ 通り

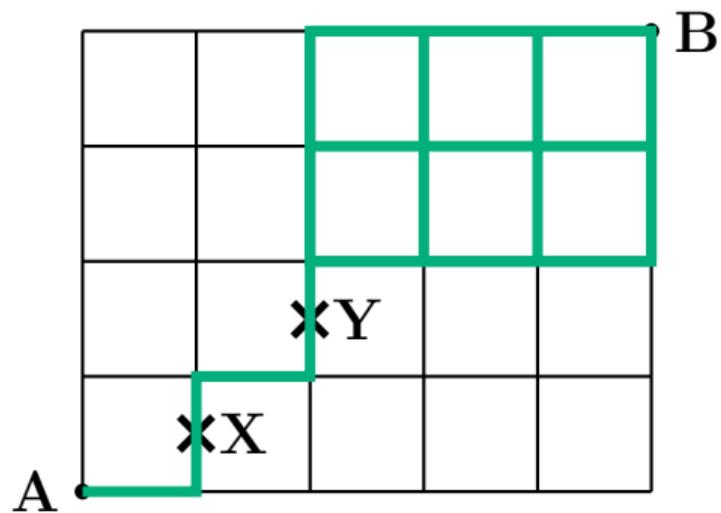


# Y を通る行き方は

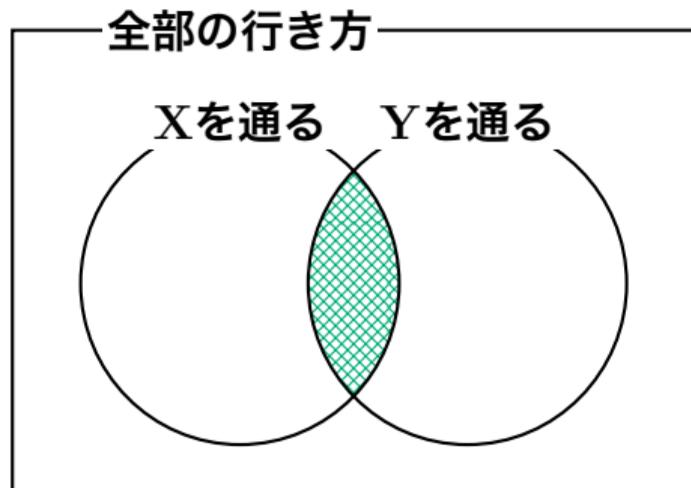


$${}^3C_1 \times {}^5C_2 \text{通り}$$

# X と Y の両方を通る行き方は



${}^5C_2$ 通り



# まとめると

$$\begin{aligned} & \text{全部} - X \text{ を通る} - Y \text{ を通る} + X \text{ と } Y \text{ 両方を通る} \\ = & {}_9C_4 - {}_7C_3 - {}_3C_1 \times {}_5C_2 + {}_5C_2 \\ = & 126 - 35 - 30 + 10 \\ = & \quad \quad \quad 71 \text{ 通り} \quad \boxed{\text{答}} \end{aligned}$$