

# Something to ruminate on

$$\mathbf{P}(A \cup B) = \mathbf{P}(A) + \mathbf{P}(B) - \mathbf{P}(A \cap B)$$

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What can you say about  $\mathbf{P(A \cup B \cup C)}$  in terms of  $\mathbf{P(A)}$ ,  $\mathbf{P(B)}$ ,  $\mathbf{P(C)}$ ,  $\mathbf{P(A \cap B)}$ ,  $\mathbf{P(A \cap C)}$ ,  $\mathbf{P(B \cap C)}$ , and  $\mathbf{P(A \cap B \cap C)}$ ?



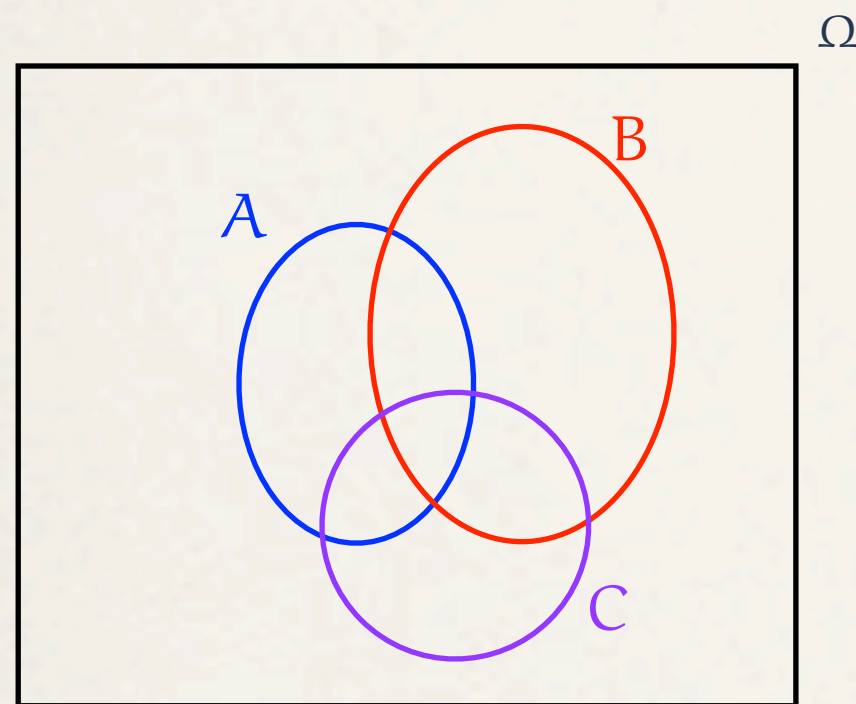
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Draw a picture!

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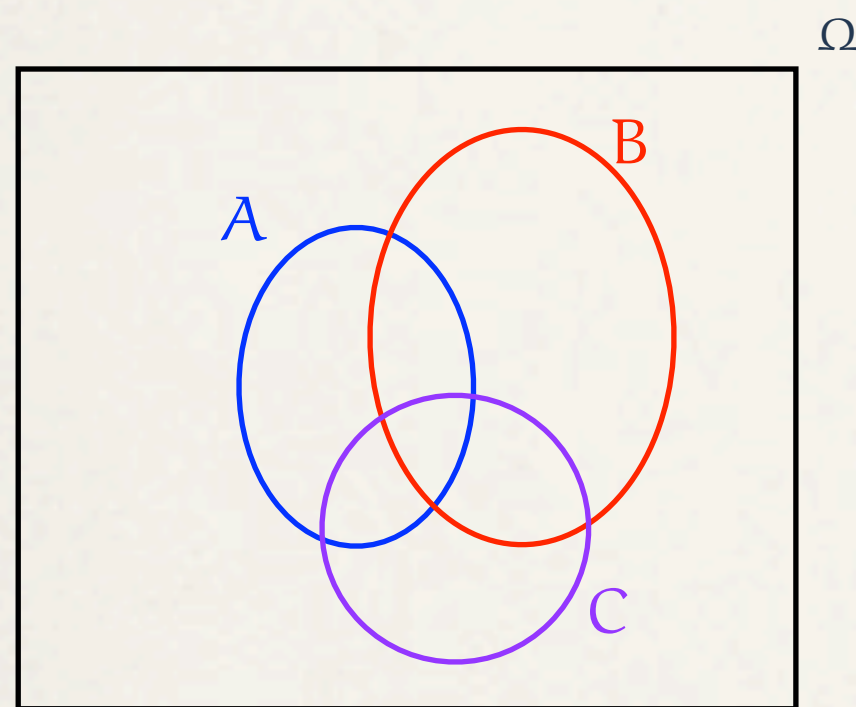
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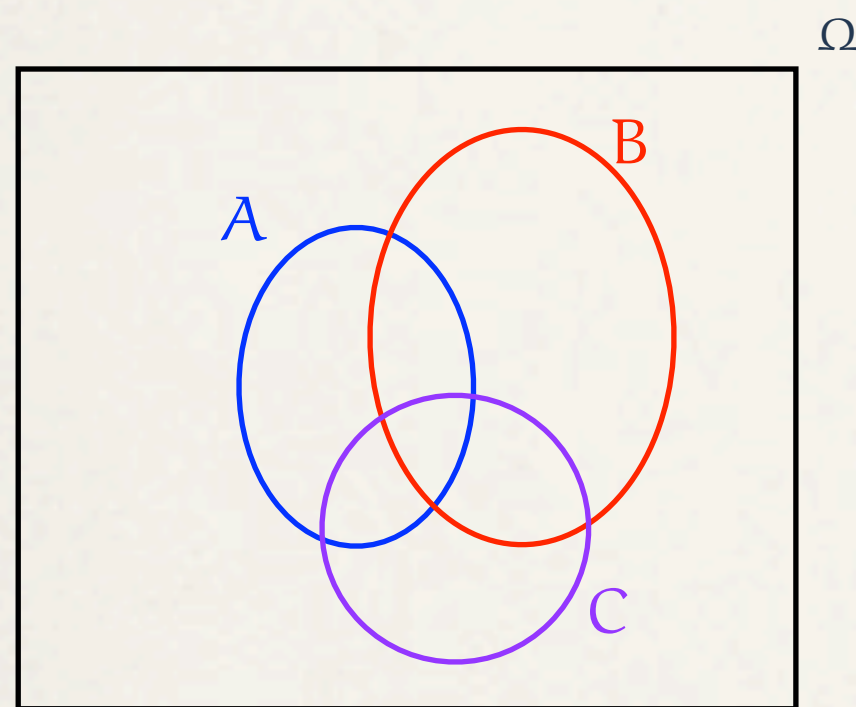
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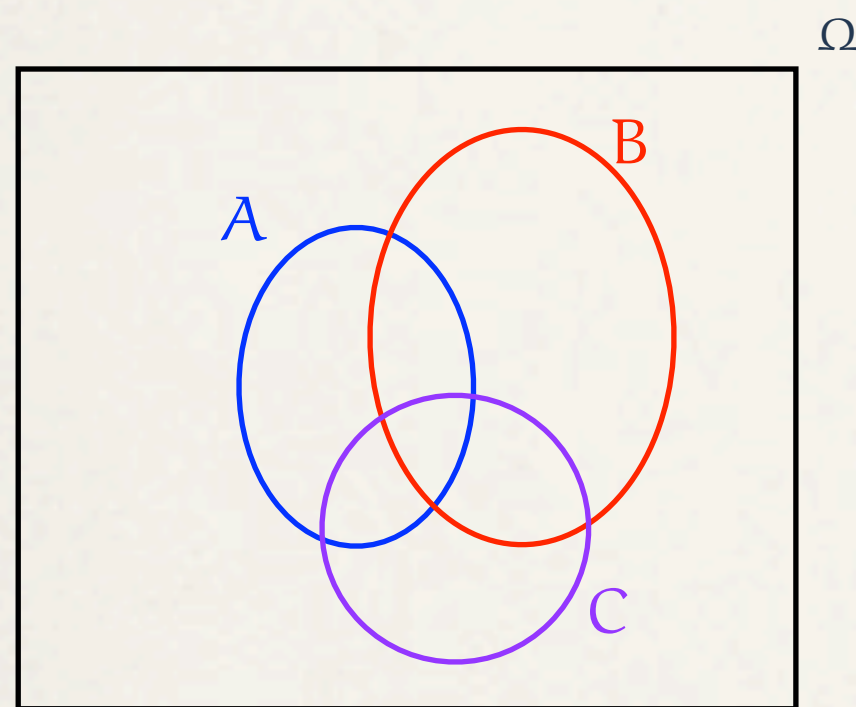
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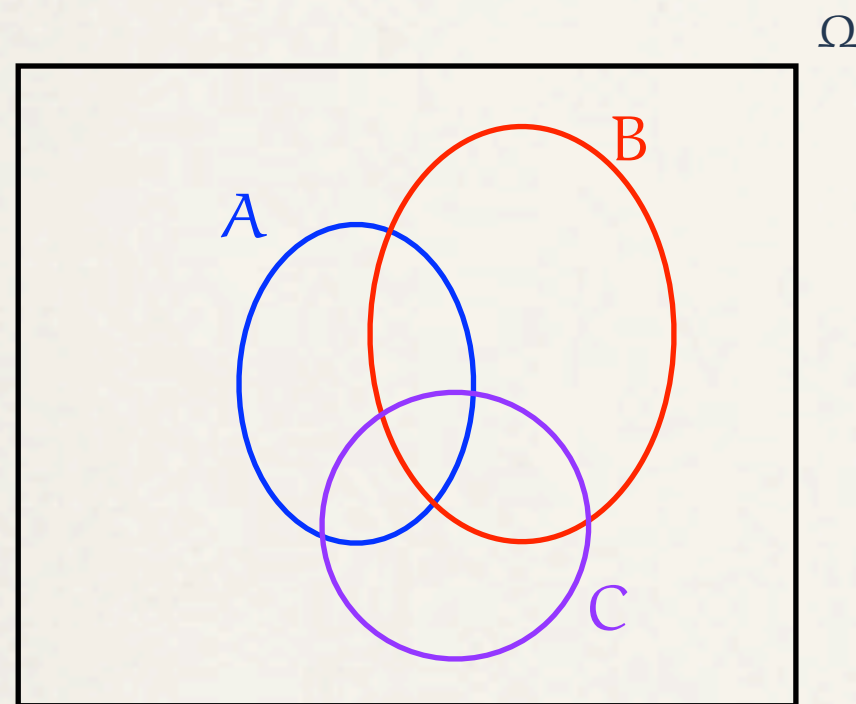
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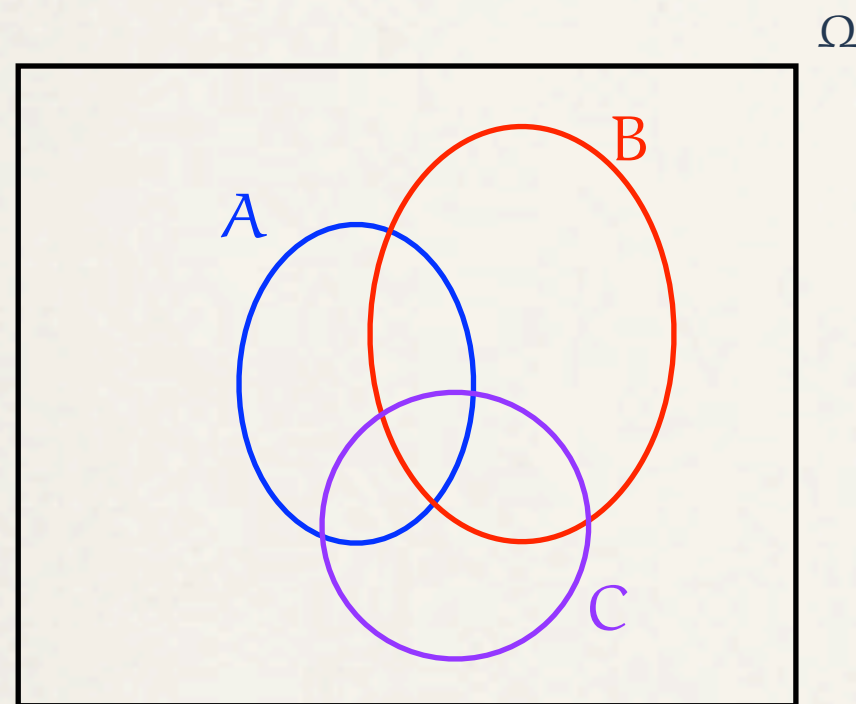
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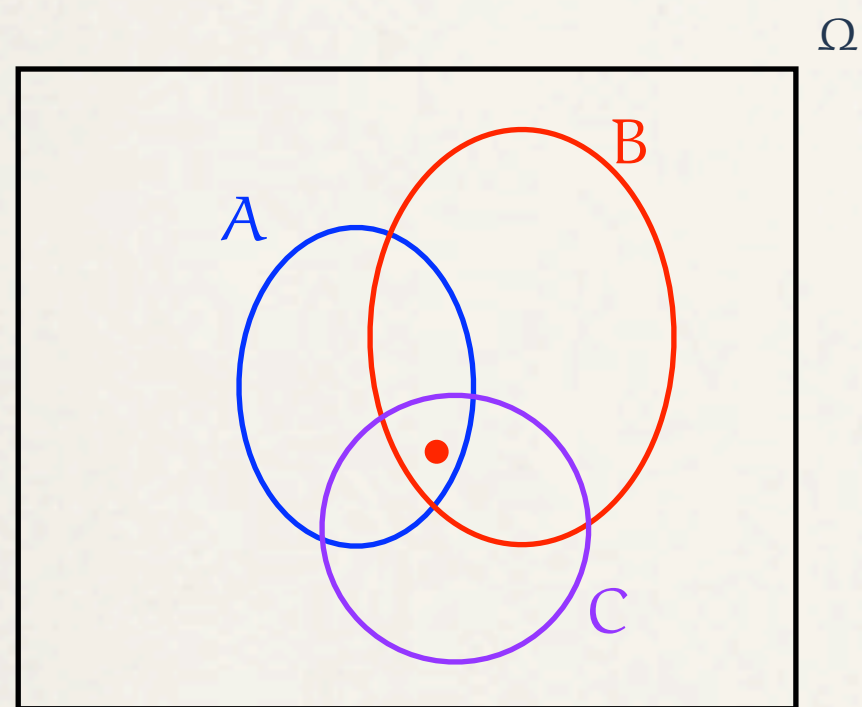
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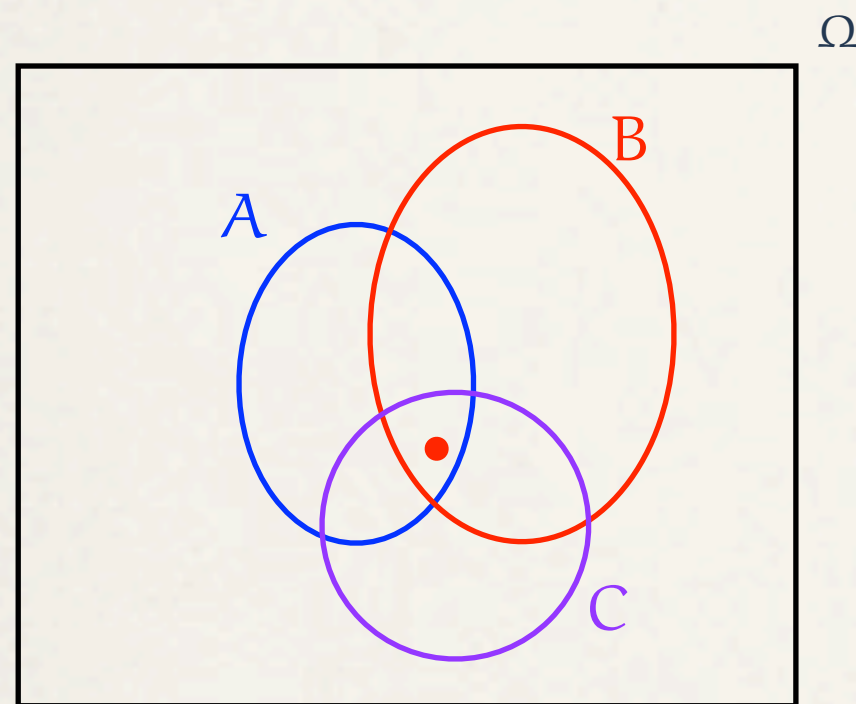
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inclusion and exclusion!

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