Question

In a deck of strange cards, there are 382 cards. Each card has an image and a color. The amounts are shown in the table below.

	gray	pink	violet	white	Total
lamp	50	26	49	28	153
needle	27	30	15	17	89
quilt	47	39	22	32	140
Total	124	95	86	77	382

Answerlist

- c("A lamp is more likely than a needle to be violet.", "A needle is more likely than a lamp to be violet.")
- What is the probability a random card is white?
- What is the probability a random card is either a lamp or gray (or both)?
- What is the probability a random card is a lamp given it is gray?
- What is the probability a random card is gray given it is a lamp?
- What is the probability a random card is both a lamp and white?
- What is the probability a random card is a needle?

Solution

Answerlist

- $P(\text{violet given lamp}) = 0.32$ and $P(\text{violet given needle}) = 0.169$, so a lamp is more likely to be violet than a needle is.
- $P(\text{white}) = 0.202$
- $P(\text{lamp or gray}) = 0.594$
- $P(\text{lamp given gray}) = 0.403$
- $P(\text{gray given lamp}) = 0.327$
- $P(\text{lamp and white}) = 0.0733$
- $P(\text{needle}) = 0.233$

Meta-information

extype: cloze exsolution: 10|0.202|0.594|0.403|0.327|0.0733|0.233 exclozetype: schoice|num|num|num|num|num|num exname: Cards extol: 0.01