

Math • AP®/College Statistics • Probability • Conditional probability

Conditional probability using two-way tables

AP.STATS: VAR-4 (EU), VAR-4.D (LO), VAR-4.D.1 (EK)

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Researchers surveyed 100 students on which superpower they would most like to have. This two-way table displays data for the sample of students who responded to the survey:

Superpower	Male	Female	TOTAL
Fly	26	12	38
Invisibility	12	32	44
Other	10	8	18
TOTAL	48	52	100

A student will be chosen at random.

PROBLEM 1

Find the probability that the student chose to fly as their superpower.

$$P(\mathrm{fly}) = 38/100$$

Check

Explain

PROBLEM 2

Find the probability that the student was male.

$$P(\text{male}) = 48/100$$

Check

Explain

PROBLEM 3

Find the probability that the student was male, given the student chose to fly as their superpower.

$$P\left(\mathrm{male}\mid \mathrm{fly}
ight)=$$
 26/38

Check

Explain

PROBLEM 4

Find the probability that the student chose to fly, given the student was male.

$$P(\text{fly} \mid \text{male}) = 26/48$$

Check

Explain

PROBLEM 5

Is this statement about conditional probability true or false?

"In general, $P(A \mid B) = P(B \mid A)$. You can reverse the order and the probability is the same either way."

Choose 1 answer:

A True

CORRECT (SELECTED)

False

Check

Explain

PROBLEM 6

Let I represent the event where the student chose invisibility as their superpower, and F represent the event where the student was female.

Interpret the meaning of $P(I | F) \approx 0.62$.

Choose 1 answer:

CORRECT (SELECTED)

) About 62% of females chose invisibility as their superpower.

Math > AP®/College Statistics > Probability > Conditional probability

Conditional probability

Conditional probability and independence

Conditional probability

with Bayes' Theorem

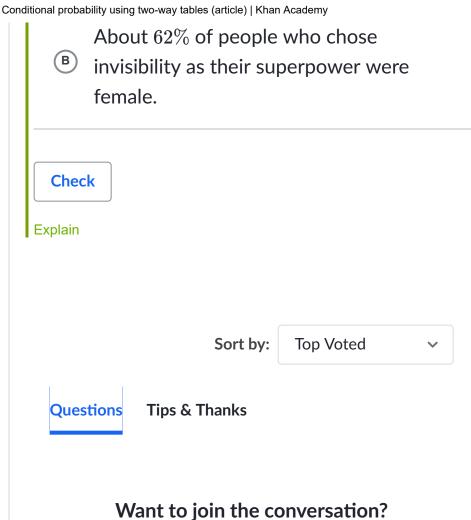
Practice: Calculating conditional probability

Conditional probability using two-way tables

Conditional probability and independence

Conditional probability tree diagram example

Tree diagrams and conditional probability



You need at least 5000 energy points to get started.



Mike Wallace 5 years ago

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How did you get your answer that 62% of females chose invisibility as their superpower. I saw up above, it was 44.



Out of 52 Females there are 32 who chose Invisibility, therefore 32/52 = 0.61538... or (about) 62%.