Using Quantitative Reasoning Approaches for solving real life problems.

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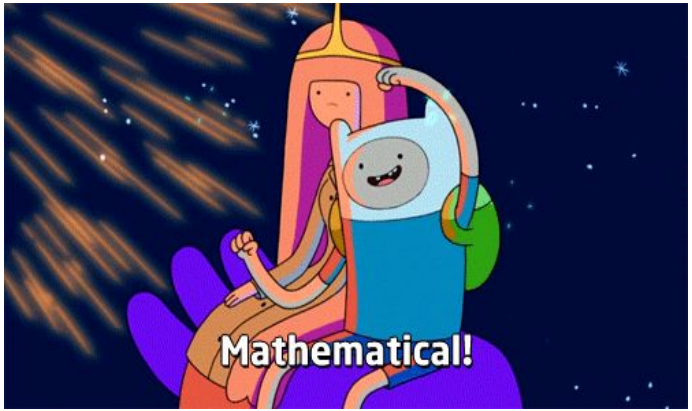
Fundamentals of Probability And Combining Probabilities

Goal: Connecting the real-life applications with Fundamentals of Probability, Combining Probabilities and concepts learned in class. More specifically Applications of Quantitative Reasoning Course to solve real-life problems on the Fundamentals of Probability And Combining Probabilities. Probability is everywhere in our daily life without even knowing.



-Brenda O.

The theory of the Probability And Combining Probabilities

Probability Theory - Is a mathematical framework that allows us to analyze chance events in logically sound manner. The outcome of a random event cannot be determined before it occurs but it may be any one of several possible outcomes. The outcome is determined by chance.

Combining Probabilities - Two events are independent if the occurrence of one event does not affect the probability of the other event.

-Brenda O.

What are Probabilities of an Formula?

The probability of a formula are the potential of something happening between a series of events. Now, by us trying to measure the chances of something happening between a series of events, we need to know the probabilities of (A) and (B).

-Dilson A.

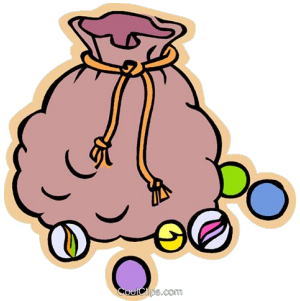
What are the probabilities of A and B?

The probabilities of A and B implies what we want to know, and find the probability of two events occurring at the same time. There are a few different formulas, depending on whether you have independent events or dependent events.

Dependent event/ Formula: P(A and B) = p(A) x P(B/A)

An dependent event is an event affected by the previous event.

For example: removing colored marbles from a bag. Each time you remove a marble the chances of drawing out a certain color will change.



Independent Event/Formula: p(A and B) = p(A) * p(B)

An independent event, is an event which its outcome does not affect the outcome of previous events. Or you can say event A does not affect the risk of B happening.

For example, the odds of you getting a new car this year are 1/4, and the odds of your ex girlfriend/Boyfriend coming back to you are 1/110.

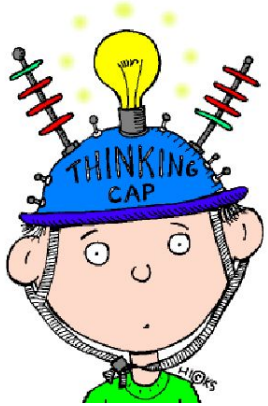
- What you want to do to solve this equation is to simply multiply both fractions together.
- ¼ * 1/110 = 1/440 =0.002

-Dilson A.

The Probability Example

- Example: In a group of class are 35 students are 15 girls and 10 boys. Find the probability that a student picked from this group at random is either a freshman or sophomore.

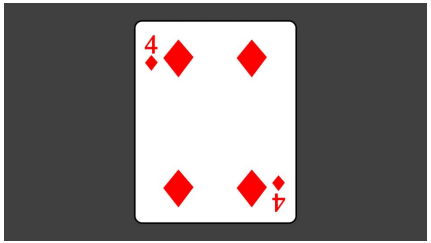
P(girls) = 15/35 and P(boys) = 20/35. Thus P(girls or boys) = 15/35 + 10/35 = 25/35



- Example: Lisa has a standard deck of 52 cards. What is the probability that she will pick a diamond when she draws a card at random?

Lisa has 13 diamonds in the deck, so there are 13 chances for Lisa to draw out a diamond. Jessica has 52 cards total.Lisa has a 25 percent chance of picking a diamond at random.

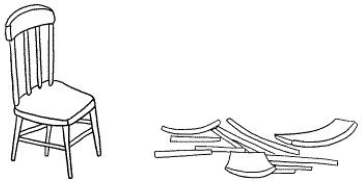
13÷52 = 0.25. 0.25 x 100 = 25,



-Maribel J.

Real-life application related to probability

- Weather forecast- Tomorrow I'm going camping; there is a chance it will rain tomorrow. I need to rescheduled. The data shows that there are 500 days with similar climate, and on 100 of those days, it has rained; the probability of it raining on that day is 1 out of 5 or 20%.



- Suppose there is an party scheduled for 21st November on the eve of your birthday (Suppose)...and your parents have invited 100 guests for the party and You have 100 chairs for those 100 guests but , 5 chairs have been broke down.So now we have 100 guests in your house but we have only 95 chairs for 100 guests. So, the calculate is going to be 100!/(100–95)!, which eventually come as 100!/5! As in percentage is 20%

-Maribel J.