

# Mathematics essay

[Technology](#), [Development](#)



Probability is a widely used term that describes the likelihood of occurrence of events. It is used to estimate the chance of an event occurring given a number of factors. We apply probability in our general life situations everyday life. For example, meteorologists used concepts of probability in forecasting future trends. When we toss a coin, we use the concepts of probability to determine the number of heads and tails that are likely to appear. Players of a lottery game will use probability to determine how many times the numbers have to be combined in order for one to win a game. Thus the general concepts of probability are very important in solving many problems that we face every day.

Probability ranges between 0 and 1. An event with a probability of 1 is described as a certain event since it must occur. An event with a probability of 0 is described to be an impossible event since it is not like to occur. As probability moves from 0 to 1, the chances of the event occurring increases and we are more certain that the event will occur.

Take a general case in determining probability from a given model that show statistics about cancer patients in both the developing and developed countries. We use probability to determine the likelihood or the chance of a person suffering from cancer that is caused by tobacco in developed countries since we can see from the chart the percentage of people who suffer from cancer that is caused by tobacco to be 16%, we are able to deduce that since probability ranges from 0 to 1, we should divide 16 by 100 to get 0.16 which clearly lies between 0 and 1. We therefore conclude that the probability of suffering from cancer caused by tobacco in developed countries is 0.16. Two events are said to be mutually exclusive if they

cannot happen both at the same time. This concept leads us to conclude that we can find the probability of people not suffering from cancer caused by tobacco in developed countries to be  $1 - 0.16 = 0.84$ . If we wish to compare the ratios of people not suffering from cancer caused by tobacco to those suffering from cancer caused by tobacco, we will get 84: 16 and find the GCF to be 4 which reduces the ratio to 21: 4 and which shows out of 25 people, we will probably find 4 suffer from cancer caused by tobacco.

The model also requires us to find the odds in favor of people who suffer from cancer caused by infections in developing countries and the pie chart shows that the number is 26% which leads us to deduce that the probability would be 0.26 which is well within 0 and 1. If we find the probability of the people in these countries who do not suffer from cancer caused by infections, we conclude that it is well  $1 - 0.26 = 0.74$  hence the conclusion that the likelihood of a person not suffering from cancer caused by infections would be high. This would be illustrated by the ratio 74: 26 which reduces to 37: 13 and hence we can conclude out of every 50 people, 13 of them would be suffering from cancer caused by infections in developing countries.

The second model that was selected is used to determine the number of women who are likely to get pregnant at the age of 30 years within 3 months. We can use this model to find out the number of women who get pregnant within 3 months at the age of 30. For example the given information shows that 16% of women get pregnant within the first 3 months and this leads to a conclusion that the probability of women getting pregnant at the age of 30 within the first 3 months is  $16/100 = 0.16$ . However, if we

wanted to find odds against women getting pregnant, we would have 1-0. 16= 0. 84 since the two events are mutually exclusive and cannot happen at the same time. In this case, the ratio would be calculated as 84: 16 which shows the number of women who do not get pregnant at the age of 30 compared to the number of women who get pregnant at the age of 30. The GCF is 4 and after division we find the new ratio is 21: 4 and thus our conclusion that out of every 25 women, 4 of them are likely to get pregnant at the age of 30 within 3 months.