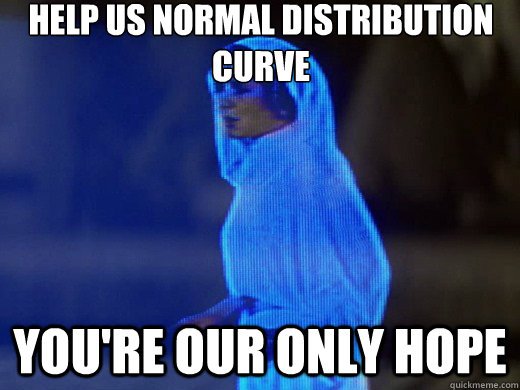
1. What is Central Limit Theorem? Please give a simple example with a line graph.



1. In a UK survey, 58% of respondents said they will vote LEAVE. What is the probability that a randomly selected respondent from this sample is will vote REMAIN ?

A. 0.42

B. more than 0.42

C. less than 0.42

D. cannot calculate using only the information given

1. Z scores are defined for distributions of any shape, but only when the distribution is YYYY can we use Z scores to calculate percentiles. What is YYYY? (one word)

NORMAL DISTRUBTION

1. Cumulative SAT scores are approximated well by a normal model, N (μ = 1500, =300). Shannon is a randomly selected SAT taker, and nothing is known about Shannon’s SAT aptitude. What is the probability Shannon scores at least 1630 on her SATs? First, always draw and label a picture of the normal distribution. (Drawings need not be exact to be useful.) always draw a picture first, and find the Z-score second

(1630-1500)/300

1. According to data from an aerospace company, the 757 airliner carries 200 passengers and has doors with a mean height of 1.83 cm. Assume for a certain population of men we have a mean of 1.75 cm and a standard deviation of 7.1 cm.
2. What mean doorway height would allow 95 percent of men to enter the aircraft without bending?

1.75x0.95 = 1.6625 cm

1. Assume that half of the 200 passengers are men. What mean doorway height satisfies the condition that there is a 0.95 probability that this height is greater than the mean height of 100 men?
2. For engineers designing the 757, which result is more relevant: the height from part (a) or part (b)? Why?
3. While watching a game of Champions League football in a cafe, you observe someone who is clearly supporting Real Madrid in the game.

What is the probability that they were actually born within 25 km of Madrid ? Assume that:

* the probability that a randomly selected person in a typical local bar environment is born within 25 km of Madrid is 1/20, and;
* the chance that a person born within 25 km of Madrid actually supports Real Madrid is 7/10;
* the probability that a person not born within 25 km of Madrid supports Real Madrid with probability 1/10.

1. Sophia who took the Graduate Record Examination (GRE) scored 160 on the Verbal Reasoning section and 157 on the Quantitative Reasoning section. The mean score for Verbal Reasoning section for all test takers was 151 with a standard deviation of 7, and the mean score for the Quantitative Reasoning was 153 with a standard deviation of 7.67. Suppose that both distributions are nearly normal.

(a) What is Sophia’s Z-score on the Verbal Reasoning section? On the Quantitative Reasoning section? Draw a standard normal distribution curve and mark these two Z-scores.

(b) What do these Z-scores tell you?

(c) Relative to others, which section did she do better on?

(d) What percent of the test takers did better than her on the Verbal Reasoning section? On the Quantitative Reasoning section?

(e) Explain why simply comparing raw scores from the two sections could lead to an incorrect conclusion as to which section a student did better on.

kişi, açık hava, kadın içeren bir resim

Açıklama otomatik olarak oluşturuldu