

# Statistics Questions 1

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## 1 Analytics Vidhya URL

- Let  $X$  and  $Y$  be normal random variables with their respective means 3 and 4 and variances 9 and 16, then  $2X-Y$  will have normal distribution with parameters?
- Suppose  $X$  and  $Y$  take values  $\{0,1\}$  and are independent with  $P(X=1)=1/2$  and  $P(Y=1)=1/3$ . What is the probability that  $P(X+Y=1)$

## 2 T-Statistic

Whenever you conduct a t-test, you will get a test statistic as a result. To determine if the results of the t-test are statistically significant, you can compare the test statistic to a T critical value. If the absolute value of the test statistic is greater than the T critical value, then the results of the test are statistically significant.

Find critical value

`scipy.stats.t.ppf(q, df)`

where:

q: The significance level to use df: The degrees of freedom