T distribution

Def

PDF

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where B is a beta function.

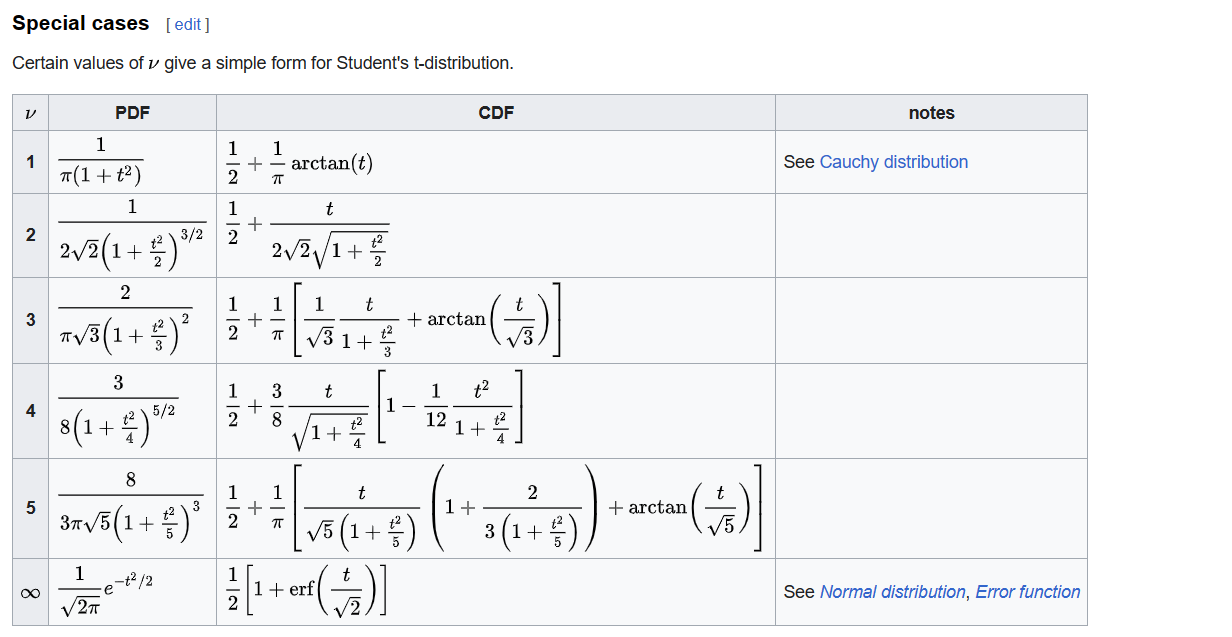
CDF

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(since it always is 0 from t to inf)

Special Case:



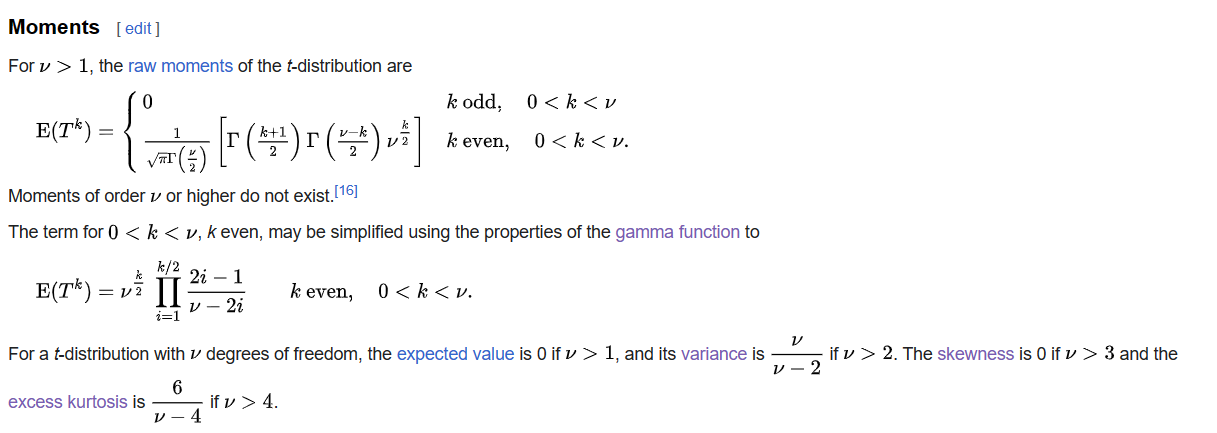
Expected Value

Really? ? Yes. That’s prove it.

Proof:

Variance

Moments



Ref

For more detailed description about t distribution, see Wiki:

[Student's t-distribution - Wikipedia](https://en.wikipedia.org/wiki/Student%27s_t-distribution)

For proof of mean and variance of t distribution, see statlect:

[Student's t distribution | Properties, proofs, exercises (statlect.com)](https://www.statlect.com/probability-distributions/student-t-distribution)