

Probability vs. Confidence Levels

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I'm looking at the work that a coworker is working on and I want to see if someone can help me to understand where he went wrong or where I went wrong in understanding.

Situation: He wants to determine what the confidence level is for detecting faults inserted into a circuit card. He uses the probability formula, but ties it to a confidence level.

For example: The current process calculates the percent detection as being equal to the percentage of sampled faults that were detected(e.g. – if 18 of 20 faults inserted were detected the percent detection would be $18/20=.90$ or 90%)

In reality, a program that detects 18 of 20 sampled faults has only a 32.3% probability (confidence level) of 90% fault detection. He used the probability formula to get this number)

From what I understand, which isn't much, probability involves random

variables and confidence refers to a constant even if it is an unknown constant.

What I think he should of said was, The probability of at least one non-detect(success) is 67.7% given the true probability is 10%. This in no way has anything at all to do with confidence levels.

I'm I understanding this correctly or can the above be stated as a confidence level?

Any help would be greatly appreciated.

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