These notes were taken by Sharon Xi during a CSCE 582 class taught by Marco Valtorta on October 28, 2003. The terminology is standard, but the direct source of much of it is a draft paper sent by Jirka Vomlel to Marco Valtorta yesterday. Columbia, SC, 03-10-28

T: test
A: the hypothesis

P(T, A)=

T \ A	yes	no
yes	tp	fp
no	fn	tn

tp: the number of true positives (A happened and T reports that it did)
fp: the number of false positives (A did not happen and T reports that it did)
tn: the number of true negatives (A happened and T reports that it did not)
fn: the number of false negatives (A did not happen and T reports that it did not)

$$\frac{tp}{tp+fp} = P(A = yes \mid T = yes) = \text{Precision of the test or positive predictive value}$$

$$\frac{tp}{tp+fn} = P(T = yes \mid A = yes) = \text{Sensitivity or recall or true positive rate}$$

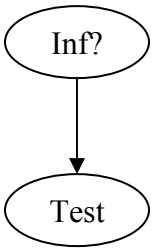
$$\frac{tn}{tn+fp} = P(T = no \mid A = no) = \text{Specificity or true negative rate or selectivity}$$

$$\frac{fp}{fp+tn} = P(T = yes \mid A = no) = \text{False positive rate or } \textbf{type I error}$$

$$\frac{fn}{fn+tp} = P(T = no \mid A = yes) = \text{False negative rate or } \textbf{type II error}$$

$$\frac{tn}{tn+fn} = P(A = no \mid T = no) = \text{Negative predictive value}$$

$$\frac{tp+tn}{tp+tn+fp+fn} = P(A = yes) = \text{ Accuracy}$$



P(Test |Inf?)=

Test \ Inf?	yes	no
yes	sensitivity	false positive rate
no	flase negative rate	specificity

Notes: Vomlel suggests using the term reliability as a generic term for the "quality" of an information source; for example, the reliability of a test could be the average of the sensitivity and specificity of that test. Some authors instead use reliability as a synonym for specificity.