

Name: Ankita Parra Score: _____ Quiz 2, Problem 4 Page# _____

Classifier Evaluation Metrics:

ACN.

Actual class \ Predicted class	cancer=yes	cancer=no	Total
cancer=yes	90	210	300
cancer=no	140	9560	9700
Total	230	9770	10000

- Sensitivity = $TP/P = 90/300 = 30\%$
- Specificity = $TN/N = 9560/9700 = 98.56\%$
- Accuracy = $(TP + TN)/AI = (90 + 9560)/10000 = 96.50\%$
- Error rate = $(FP + FN)/AI = (140 + 210)/10000 = 3.50\%$

$$\rightarrow \text{Precision} = TP/(TP + FP) = 90/(90 + 140) = 90/230 = 39.13\%$$

$$\rightarrow \text{Recall} = TP/(TP + FN) = 90/(90 + 210) = 90/300 = 30.00\%$$

$$\rightarrow F1 = 2P \times R / (P + R) = 2 \times 39.13\% \times 30.00\% / (39.13\% + 30\%) = 33.96\%$$