

Name:

Short Quiz 3A

13 October 2025

Question 1: A classifier has the following confusion matrix $\begin{pmatrix} \text{TN} = 50 & \text{FP} = 9 \\ \text{FN} = 18 & \text{TP} = 18 \end{pmatrix}$. Compute its recall and its precision.

Answer: recall = $\frac{\text{TP}}{\text{TP}+\text{FN}} = \frac{18}{18+18} = 0.5$, precision = $\frac{\text{TP}}{\text{TP}+\text{FP}} = \frac{18}{18+9} = 0.666\dots$

Question 2: What is the accuracy of a classifier?

Answer: It is the proportion of test samples that were correctly labeled by the classifier.

Question 3: True or false? Circle the right answer.

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| T | F | When $n < p$, there are infinitely many ERMs for linear regression with the quadratic cost. |
| T | F | Without regularization, polynomial regression tends to overfit more than linear regression. |
| T | F | A high recall means that the classifier outputs a lot of false negatives. |

Answer: True — True — False.