Quiz: Measuring Accuracy

Due Feb 15 at 3:30pm **Points** 10 **Questions** 10 **Time Limit** 30 Minutes

Instructions

This is an individual quiz with a 30 minutes limit.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	16 minutes	7 out of 10

Score for this quiz: **7** out of 10
Submitted Feb 3 at 6:46pm
This attempt took 16 minutes.

Question 1

1 / 1 pts

Which are classification problems?

Correct!

- [x] Building a model to predict which industry a firm belongs to

  Industry classification is a categorical variable, thus it is a classification problem.

- [ ] Building a model to predict the FICO credit score of consumers
- [ ] Building a model to predict house prices

Correct!

- [x] Building a model to predict whether a transaction is fraudulent or not

  Fraudulence is a categorical variable (True/False) and thus it is a classification problem.

Question 2

0 / 1 pts

Given the data below, compute the **mean square error.**

ID	Predicted Outcome	Actual Outcome
1	1	3
2	43	33
3	2	5
4	5	1
5	3	2
6	6	4
7	4	9
8	10	5
9	15	20
10	8	8

- 4.57
- You Answered — 209

  This is the sum of the squared errors, not the mean.
- -0.7
- Correct Answer — 20.9

Question 3

0 / 1 pts

What is a false positive (Type I) error?

- You Answered — Predicting a negative outcome when the actual outcome is positive

  Wrong. This is "False Negative" or type II error.

Predicting a positive outcome when the actual outcome is positive

Predicting a negative outcome when the actual outcome is negative

Correct Answer

Predicting a positive outcome when the actual outcome is negative.

Question 4

1 / 1 pts

Given the following data, build a confusion matrix:

ID	Predicted Outcome	Actual Outcome
1	True	False
2	True	True
3	False	False
4	False	False
5	False	True
6	True	False
7	True	False
8	False	False
9	False	False
10	True	False

Predicted	Actual Positive	Actual Negative
Positive	1	4
Negative	4	4

Correct!

Predicted	Actual Positive	Actual Negative
Positive	1	4
Negative	1	4

Predicted	Actual Positive	Actual Negative
Positive	4	4
Negative	4	1

Predicted	Actual Positive	Actual Negative
Positive	4	4
Negative	1	4

Question 5

1 / 1 pts

Compute the precision (positive predictive value) of a model with the following confusion matrix:

Predicted	Actual Positive	Actual Negative
Positive	4	9
Negative	5	82

44%

69%

Correct!

31%

Correct! Precision = TP / (TP +FP) = 4 / (4+9) = 31%

56%

Question 6

1 / 1 pts

Compute the Recall (True Positive Rate, or Sensitivity) of a model with the following confusion matrix:

Predicted	Actual Positive	Actual Negative
Positive	4	9
Negative	5	82

- 56%
- 82%

Correct!

- 44%

Correct! Recall = TP / (TP + FN) = 4 / (4+5) = 44%

- 10%

Question 7

1 / 1 pts

Compute the False Positive Rate of a model with the following confusion matrix:

Predicted	Actual Positive	Actual Negative
Positive	4	9
Negative	5	82

- 56%
- 44%

Correct!

- 10%

Correct. False Positive Rate = FP / (FP + TN) = 9 / (9+82) = 10%

90%

Question 8

1 / 1 pts

Compute the F1 Score of a model with the following confusion matrix:

Predicted	Actual Positive	Actual Negative
Positive	4	9
Negative	5	82

44%

18%

Correct!

36%

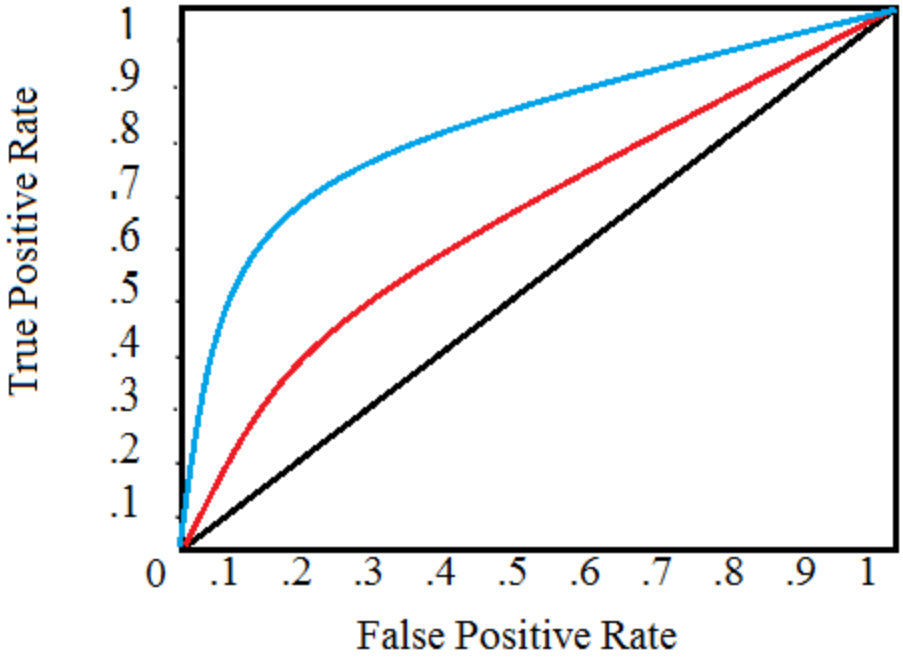
Correct! F1 Score = 2* Recall * Precision / (Recall + Precision) = 2 * 44% * 31% / (44% + 31%) = 36%

82%

Question 9

1 / 1 pts

Given the ROC curves below, which model is the **most** accurate?



- Red Model
- Black Model
- Not possible to determine.

Correct!

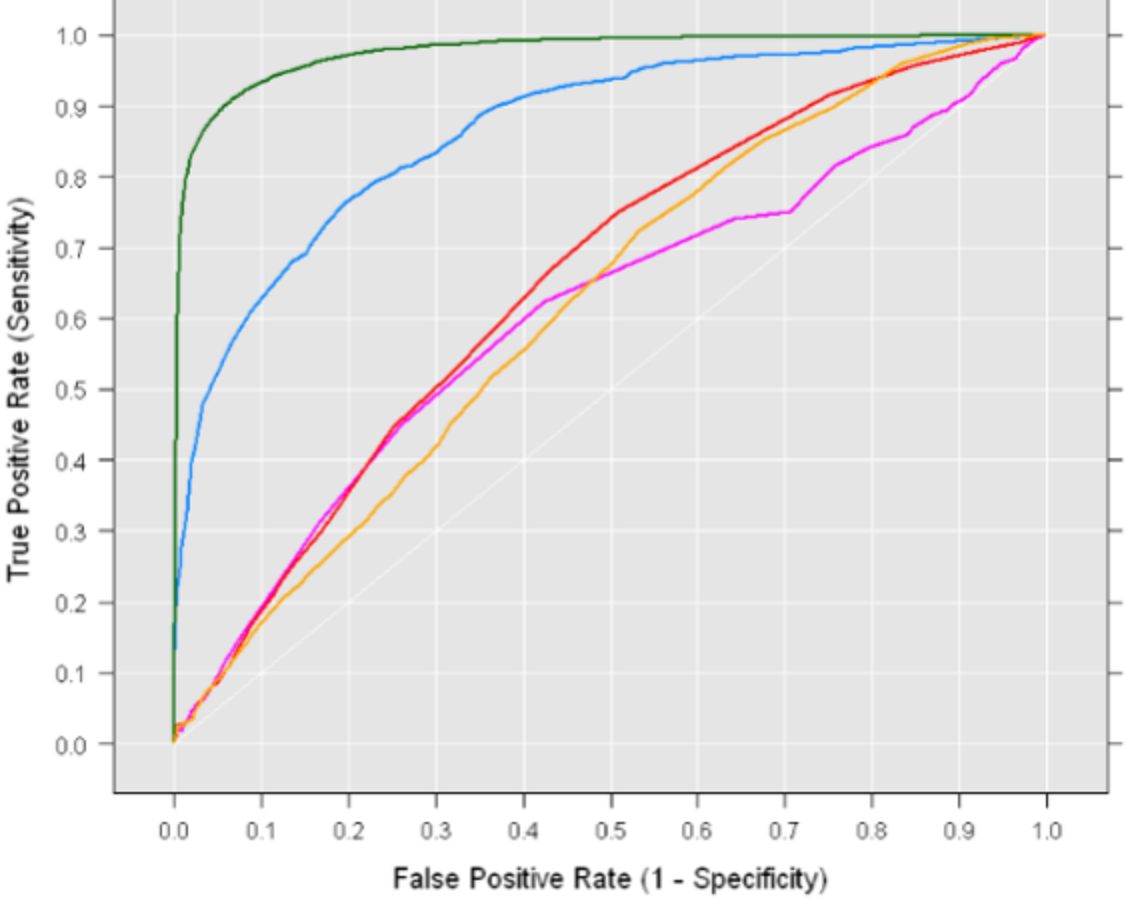
- Blue Model

Correct! The blue model is the closest to the top-left corner.

Question 10

0 / 1 pts

Given the ROC curves below, which model is the **least** accurate?



- Yellow Model
- Blue Model
- Red Model

Correct Answer

- Not possible to determine.
- Green Model

You Answered

- Purple Model

Quiz Score: **7** out of 10