1. A logistic regression optimizes:
   * RMSE
   * Accuracy
   * F1-score
   * Log Loss [x]
   * Precision
   * Binary cross-entropy [x]
2. A logistic regression model coefficient value can be interpreted as:
   * An increase of the positive class probability for a unit increase of the corresponding variable
   * An increase of a logarithm of the positive class probability for a unit increase of the corresponding variable
   * An increase of the positive class likelihood for a unit increase of the corresponding variable
   * An increase of a logarithm of the positive class likelihood for a unit increase of the corresponding variable
   * None of the above [x]
3. For an imbalanced dataset it's easy to achieve high:
   * F1-score
   * R-squared
   * Accuracy [x]
   * MSE
   * ROC AUC
4. Your model's ROC AUC is 0.01. It seems to be:
   * Awful
   * Great
   * Just ok
   * Due to some mistake [x]
   * None of the above
5. Which metric would you use to evaluate a model for a cancer screening with ample capacity for follow-up examination:
   * Accuracy
   * Precision
   * Recall [x]
   * F1
   * R-squared
6. Which metric would you use to evaluate a model for selecting gifted students for a limited number of special programs:
   * Accuracy
   * Precision [x]
   * Recall
   * F1
   * R-squared
7. Increasing k twice for kNN will:
   * increase the required CPU power approximately twice
   * make the predictions less stable
   * reduce accuracy
   * straighten the decision boundary [x]
   * none of the above
8. kNN is likely to work better than a logistic regression when:
   * a decision boundary is (nearly) linear
   * predictor importance is essential to know
   * the observations are drawn from a Gaussian distribution
   * very low (near real) classification time is paramount
   * recall is more important
   * features are not normalized
   * none of the above [x]
9. Let F be a binary classification model applied to an imbalanced dataset (20% of positive samples, 80% of negative samples); x\_1, x\_2, ..., x\_n are the instances sorted by the predicted positive class probabilities: F(x\_1) < F(x\_2) < ... < F(x\_n).  
   y\_1, y\_2, ..., y\_n are true labels (each y\_i is either 0 or 1). Consider all pairs (x\_i, x\_j), where i < j. A pair is called defective if y\_i > y\_j. Total number of defected pairs is equal to:
   * n^2 \* False Positive Rate
   * 0.2 \* n \* (1 - Accuracy)
   * 0.16 \* n^2 \* (1 - ROC AUC) [x]
   * 0.16 \* n^2 \* (1 - Accuracy)
   * 0.8 \* (FN + FP)