Classification

TOTAL POINTS 15

1. Which one **IS NOT** a sample of classification problem?   (3 points)

    ○ To
       predict the category to which a customer belongs to.

    ○ To predict
       whether a customer switches to another provider/brand.

    ◉ To predict the amount of money a customer will spend in one year.

    ○ To
       predict whether a customer responds to a particular advertising campaign
       or not.

2. Which of the following statements are **TRUE** about Logistic Regression? (select all   (3 points)
    that apply)

    ☑ Logistic regression can be used both for binary classification and multi-class
       classification

    ☑ Logistic regression is analogous to linear regression but takes a categorical/discrete
       target field instead of a numeric one.

    ☑ In logistic regression, the dependent variable is binary.

3. Which of the following examples is/are a sample application of Logistic Regression?   (3 points)
    (select all that apply)

    ☑ The probability that a person has a heart attack within a specified time period using
       person's age and sex.

    ☑ Customer's propensity to purchase a product or halt a subscription in marketing
       applications.

    ☑ Likelihood of a homeowner defaulting on a mortgage.

    ☐ Estimating the blood pressure of a patient based on her symptoms and biographical
       data.

4. Which one is **TRUE** about the kNN algorithm?

3 points

○ kNN is a classification algorithm
that takes a bunch of unlabelled points
and uses them to learn how to label other points.

◉ kNN algorithm can be
used to estimate values for a continuous
target.

5. What is **"information gain"** in decision trees?

3 points

○ It is the information that can decrease the level of certainty after splitting in each node.

◉ It is the entropy of a tree before split minus weighted entropy after split by an attribute.

○ It
is the amount of information disorder, or the amount of randomness in each node.

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