Assignment 4 - Objective

The due date for submitting this assignment has passed. Due on 2020-02-26, 23:59 IST. As per our records you have not submitted this assignment.

1) State whether True or False.

The image of a closed set under a continuous function is closed.

☐ True
☐ False

No, the answer is incorrect.
Score: 0
Accepted Answers: False

2) Let \( f : \mathbb{R} \rightarrow \mathbb{R} \) be continuous and \( A, B \subseteq \mathbb{R} \) be nonempty. Suppose \( f \) is uniformly continuous on \( A \) and on \( B \). Then

☐ \( f \) is uniformly continuous on \( A \cup B \).

☐ \( f \) is uniformly continuous on \( A \cup B \) if and only if \( A \cap B \neq \emptyset \).

☐ \( f \) is uniformly continuous on \( A \cap B \), but not necessarily on \( A \cup B \).

None of the above.

No, the answer is incorrect.
Score: 0
Accepted Answers: None of the above.

3)
State whether True or False.
Let \((x_n)\) be a sequence and \(f \in \mathbb{R}\) such that \(|x_n| \to |l|\). Then \(x_n \to l\).
- True
- False
No, the answer is incorrect.
Score: 0
Accepted Answers: False

4) State whether True or False.
Let \(f, g : \mathbb{R} \to \mathbb{R}\) be continuous. Then \(\max\{f, g\}, \min\{f, g\}\) are continuous.
- True
- False
No, the answer is incorrect.
Score: 0
Accepted Answers: True

5) State whether True or False.
Let \(f : \mathbb{R} \to \mathbb{R}\) and \(\beta > 0\) such that
\[|f(x) - f(y)| \leq |x - y|^\beta,\] for all \(x, y \in \mathbb{R}\).
Then \(f\) is uniformly continuous.
- True
- False
No, the answer is incorrect.
Score: 0
Accepted Answers: True