CXI Code Sample

Please complete one of the following sample code problems in your prefered programing language.

Problem #1 - Palindrome

Description: Your program must take in a string and then return if the string is a [palindrome](#).

- Ignore any special characters
- Ignore character case
- Must allow numbers

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Sample Runs:
Input: A man, a plan, a canal, Panama!
Output: true

Input: Kayak
Output: true

Input: 123321
Output: true

Input: 123421
Output: false
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Problem #2 - Most duplicate letters

Description: Your program must take a in a sentence and determine the word with the most duplicate letters and return that word.

Sample Runs:
Input: "O Romeo, Romeo, wherefore art thou Romeo?"
Output: "wherefore"
Explanation: The letter "e" is repeated three times in the word "wherefore"—and this is more than any other letter is repeated in any other word!

Input: "Some people feel the rain, while others just get wet."
Output: "people"
Explanation: Both "people" and "feel" have a letter that is repeated twice within the word. This is a tie—and the first word wins!

Problem #3 - Bracketology

Description: Your program must take a in a string and determine if all parentheses are properly opened and closed.

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Sample Runs:
Input: (()))()
Output: false

Input: ()()(()())
Output: true

Input: )()(
Output: false
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