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**Test 1**

Answer the following programming questions using Javascript. Your program should run using NODE and be contained in a single file.

**Instructions**

Create a new file named "main.js". Answer each question in the main.js file. Don't forget to comment your code as you write it.

Include your name, section, date, student number and email address in comments at the top of your file.

Comment the Question # in your file as well. (Note, sometimes I paste the question right into the .js file, that way you can refer to the question as you're writing the code!)

Some questions require you to type a paragraph as well as code. Use comments to do this.

Do \***NOT**\* use ChatGPT.

All questions can be answered using Week 1 and Week 2 notes here: [https://Web322.ca](https://web322.ca/)

**Submission**:

ZIP (Not RAR!) and submit your code to have it graded. Name your file "**StudentNumber\_WEB322\_SECTION\_Test1.zip**"

**Grading**

There are 20 questions. You must answer the question in full to receive full grades.

You will be graded on proper naming of your file(s), syntax, code standards, neatness and quality of code.

**Object-Oriented JavaScript Questions:**

* 1. Write a JavaScript function using Object Literal Notation to create a 'Car' object, with properties.
  2. Method Implementation with this: Implement a method in the 'Car' object that uses "this".
  3. Class and Constructor: Create a 'Rectangle' Class with constructor and methods.
  4. Private Properties and Accessors: Add private properties with getters and setters in 'Rectangle'.

**Modern JavaScript Syntax Questions:**

* 1. Iterate over an array of your choice, using for...of.
  2. Double each number in an array with forEach().
  3. Extract the first two elements of an array.
  4. Write an arrow function for summing two parameters.

**Advanced JavaScript Techniques:**

* 1. Create a greeting message function using template literals.
  2. Error Handling with try/catch: Implement error handling in a function.
  3. Custom Error Throwing: Throw a custom error for non-numeric arguments.
  4. Combine two arrays using spread syntax.

**More JavaScript Functionalities:**

* 1. Swap first and last elements of an array.
  2. Merge two objects into one object.
  3. Perform calculations inside a template literal.
  4. Create a JavaScript function that uses closures to encapsulate and protect a private variable within an object, allowing it to be accessed only through a specific method.

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