First Name Last Name
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CS 90.3 Midterm

November 3, 2009
Exam ID: Exam ID

Instructions:

- Write your answers in the spaces provided.
- There is no penalty for guessing, so be sure to answer all questions.
- Unless otherwise indicated, all questions count equally.

1. Write JavaScript statements that assign the following values to a variable named "a_var." I've done the first one for you to show you what I mean:

   A. A number
   ```
   a_var = 123;
   ```

   B. A string

   C. An empty array

   D. An object containing two variables, *x* and *y*; make the value of *x* the number 3 and make the value of *y* the string, "hello."

   E. The value returned by some function named *func()* (Assume *func()* was defined elsewhere and that it takes no arguments

   F. The value of a variable *x*, which is a member of an object named *obj*.

   G. The third element of an array named *arr*.

2. (A) Explain the *two* uses of the + operator in JavaScript. (B) Tell what happens if the + operator is used with a string for one operand and a number as the other one.
   A.

   B.

3. Write the definition of a function named *plus_3()* that gets passed one argument and returns the value of that argument + 3. Answer this questions twice: there are two different ways to define a function in JavaScript; show both methods. This question has nothing to do with objects; see the next question before you answer this one.

   A.

   B.

4. Now show *two* ways to put the definition of a function named *f()* in an object named *obj*. Just use three dots (…) to represent the statements inside the function.

   A.

   B.

5. Write an anonymous self-executing function that does nothing except to return the number 123.

6. What do the objects in the DOM tree correspond to?

7. What does the function *document.getElementsByTagName()* do?

8. What does the function *document.getElementById()* do?

9. What is an *event handler*, and what causes it to execute?

10. What does the function *Core.addEventListener()* do?

11. What does the function *Core.start()* do?

12. Write a loop that computes the sum of all the numbers in an array. First, declare a variable named *sum* and give it an initial value of 0. Then write a *for* statement that makes the index variable named *i* start at 0 and increase by one each time through the loop until it reaches the length of the array. Assume the array is already in a variable named *the_array*. You need to test the type of each element in the array to be sure it is a number before adding its value to *sum.*