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1. Lisp question explanation

3.7.

(defun miles-per-gallon(INITIAL-ODOMETER-READING FINAL-ODOMETER-READING
GALLONS-CONSUME)

(/ (- FINAL-ODOMETER-READING INITIAL-ODOMETER-READING) GALLONS-CONSUME))

3.10. (correct versions in script)

1. Missing quote caused *the* to be an undefined function
2. Two missing quotes caused *and* and *is* to be undefined variables
3. The argument wanted to be added to 1 is not a number, there is a quote where it should not be
4. Missing quote caused *seymour* to be an undefined function
5. Missing quotes caused *seymour* to be an unassigned variable.

3.21

1. There should be no quotes before the variables in the function definition
2. There should not be parentheses around each variable in the function argument definition.
3. There should not be extra parentheses around each variable within the parentheses of the function's arguments.

2. Chapter 2 Review Question Answers

2. arrays and records (structs)

5. The lack of floating-point hardware meant that all floating-point operations had to be simulated in software which took up a great amount of processing time leading to accepted interpretation slowness.

6. The hardware capability of having floating-point operations and indexing instructions built into it. This strongly affected the evolution of programming languages because it removed the cost of interpreting, which was very high for floating-point operations especially.

7. 1954

8. Scientific computations

9. The control statements were based on the IBM 704 instructions.

10. Independent compilation of subroutines which allowed changes to be made to the program without having to recompile the whole program.

11. Logical loop control statements and added optional else clause for if statements.

14. Linguists were interested in natural language processing which has to do with a computer understanding and generating human language.

15. Lisp was developed at MIT by John McCarthy and facilitated by Marvin Minsky's work on AI

20. The lack of input and output statements limited the widespread use of ALGOL 60.

21. BNF (Backus-Naur form). It used to be viewed as odd and complicated but now is considered simple and is still used.

22. FLOW-MATIC language

23. 1959

24. records (hierarchical data structures)

25. The Department of Defense

36. Instead of a program describing how to compute a result, a nonprocedural language describes the form and/or characteristics of the result.

37. Rules and facts.

46. Embedded consumer electronic devices

51. Web programming

52. JavaScript and PHP have similar syntax because they both have dynamic typing, strings and arrays and they are both used for web programming and development.

57. In C the switch statement does not provide implicit branches at the end of its code segments which means multiple conditions can run under one execution. In C# every selectable segment must end with an explicit unconditional branch statement (break or goto).

59. An XML data document and an XSLT document that specify transformations for the XML document by defining templates (data patterns found by processor in the XML input file)

60. A transformed XML document.