Right Angles -- Calculus

A Puzzle by David Pleacher

Determine the answer to each problem on the next page.

Then write the word in the 10 by 10 matrix below using the following rules:

- 1. Each word makes one right-angle turn somewhere along its length. But you must determine where each word makes this turn and in which direction.
- 2. As a guide, the starting direction (i.e., the direction of the word before its right angle turn) of each answer is indicated by the letter given after the clue number.
- 3. Words can go North, South, East, or West to start with. For example, 1S begins on square 1 and heads South.

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4. Each letter in the correctly completed grid appears in only one word.

Calculus Problems:

1N The field of mathematics that deals with differentiation and integration is called

2W The ______ of a function exists if the right-hand limit and the left-hand limit both exist and are equal to each other.

3E The instantaneous rate of change of a function with respect to the variable is called the

4W The derivative of a ______ function is always a constant.

5N When a function can not be defined explicitly, it is best to use ______ differentiation.

6W The line perpendicular to the tangent line is called the ______.

7W The derivative of a function at a point is the slope of the ______ line at that point.

- 8W The points on a curve where the value is greater than that of the surrounding points is called a relative _____.
- 9S The points on a curve where the value is less than that of the surrounding points is called a relative ______.
- 10S A point on the curve where the concavity changes is called a Point of ______.
- 11N A function is _____ down if f''(x) < 0.
- 12E (u v)' = uv' + vu' is called the _____ rule.

13S The derivative of sin(x) with respect to x is the _____ of x.

14S The set of all possible values of the argument of a function is called the ______.

Many thanks to Nacoe Thomas for finding the error in 11N. The third derivative should have been a second derivative and is now correct.