CALCULUS II, SUMMER 2015 - EXAM 3

130 points total = 10 points + 120 extra credit points

Name: _____ Score: _____/ 10

N.B. *Do not include scratch-work, but do write neatly and legibly. Everything written on these pages will be graded, so long as it is legible.*

Problem 1 (20 points). Find the radius of convergence of the *zero series*

$$\sum_{n=1}^{\infty} 0.$$

Date: August 13, 2015.

Problem 2 (20 points). Find the Taylor series of the *zero function*

$$f(x) = 0$$

centered at any point you like, as long as it's 0. What is the zeroth-degree Taylor polynomial of f?

Problem 3 (20 points). Compute the limit of the *zero sequence*, given by the formula

$$a_n = 0$$

for each $n \geq 0$. (We assume that $\mathbb{N}$ includes 0, though I am sure this needn't be spelled out.)

Problem 4 (20 points). What is the zeroth derivative of a zero-degree polynomial?

Problem 5 (20 points). 0.

Problem 6 (20 points). Show that $0 + 0 \geq 0$.

Problem 7 (10 points). Show that

$$\int_0^z \int_0^y \int_0^x 0 \, dx \, dy \, dz = 0$$

for all $z \in \{0\}$. This is called a *triple integral*, a detailed treatment of which is probably beyond the scope of this course.