**Mid-term revision paper for calculus2**

n is your student number.

k = n mod 10000. T = n mod 100. m = n mod 35.

a = n mod 25. L = n mod 10.

**Integrals:**

I. Solve the integral problem.

1.I. Calculate average value, center of mass and moment of inertia of f(x)=1+cos(Tx)@[1/n,1/k].

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2.I. Find arc length of f(x) a. -0.006x2+0.3x@[1/n,11-1/k], b.1+cos(Tx)@[1/n,1/k], c.x2@[0,T].

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3.I. Calculate revolutionary volume and surface area of f(x) = 1 + cos(Tx) @ [1/n, 1/k].

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4.I. Calculate a. b. c. Use 4T intervals.

5.I. Assess the integration error bounds for

using 4T intervals for left rectangles, right rectangles, middle rectangles, trapezoidal and Simpson rules.

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**Exponential growth and decay:**

II. Give the solution to the exponential growth and decay problem.

1.II. If I reduce the score 10% every day, what will be the score after T days?

Calculate the result for the instantaneously calculated rate.

2.II. If I invest $100 to a bank at T percent per year interstates, in how many years will I have $200?

Calculate the result for the instantaneously calculated rate.

**Differential equations:**

III. Solve the differential equation problem.

1.III. Solve: ay'' + my' + Ly = kt

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2.III. Solve the projectile problem for d = (11-1/T) meters and h = (2.5-1/k) meters.

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**Series:**

IV. Solve the series problem.

1.IV. What is the hangover of *n* meter blocks?

2.IV. Calculate

a. b. c.d.e.f.g.h. i.

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http://calculus12s.weebly.com/uploads/2/5/3/9/25393482/inverse6powers.txt

3.IV. Find

4.IV. Find the convergence radius and the sum.

5.IV. Calculate

**Project:**

V. Describe your project.

**Deadline: 5.5.2016.**