**3 individual task in calculus:**

Edited at 8am 30.11.2016.

s is your student number. k = s mod 10000. T = s mod 100.

Application of integrals:

1. Calculate area bellow the curve f(x)=1+cos(Tx)@[1/s,1/k].

2. Calculate area between the curves f(x)=1+cos(Tx) and g(x)= 1+sin(Tx)@[1/s,1/k].

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

http://calculus12s.weebly.com/uploads/2/5/3/9/25393482/average\_value\_of\_continuous\_function.txt

http://calculus12s.weebly.com/uploads/2/5/3/9/25393482/center\_of\_mass.txt

http://calculus12s.weebly.com/uploads/2/5/3/9/25393482/y\_center\_of\_mass.txt

http://calculus12s.weebly.com/uploads/2/5/3/9/25393482/curves\_center\_of\_mass.txt

http://calculus12s.weebly.com/uploads/2/5/3/9/25393482/moment\_of\_inertia.txt

http://calculus12s.weebly.com/uploads/2/5/3/9/25393482/x\_curves\_moment\_of\_inertia.txt

http://calculus12s.weebly.com/uploads/2/5/3/9/25393482/y\_curves\_moment\_of\_inertia.txt

http://calculus12s.weebly.com/uploads/2/5/3/9/25393482/corrected\_averages\_centers\_massess\_inertia\_moments.jpg

http://www.integral-calculator.com/

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

http://calculus12s.weebly.com/uploads/2/5/3/9/25393482/arc1.txt

http://calculus12s.weebly.com/uploads/2/5/3/9/25393482/arc2.txt

http://calculus12s.weebly.com/uploads/2/5/3/9/25393482/arc3.txt

http://www.integral-calculator.com/

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

http://calculus12s.weebly.com/uploads/2/5/3/9/25393482/volume\_of\_revolution.txt

http://calculus12s.weebly.com/uploads/2/5/3/9/25393482/surface\_of\_revolution.txt

http://www.integral-calculator.com/

6. Calculate Riemann sum for integral

for T intervals.

7. Draw the fractals. ReC = 1 / s. ImC = 1 / T.

Draw a fractal https://www.wolframalpha.com/input/?i=Julia+set+0.1%2B0.05i

http://calculus12s.weebly.com/uploads/2/5/3/9/25393482/draw\_fractal.txt

Games:

8. Prepare to Dota2 Gaming Competition. Try to win millions US$.

http://www.dota2.com/international/overview

https://en.wikipedia.org/wiki/The\_International\_(Dota\_2)

Project:

9. Develop your project into a research paper.

Try to produce something publishable.

Digital signature:

Calculate your secret random number between 1 and k as your digital signature.

d =RANDBETWEEN(1, k)

https://www.random.org/integers/

Do NOT share your d with anybody, including me.

My mode is 421, give your 3d mod 997 = . . . . . . . . . here d is your secret digital signature.

421d mod 997 = secret key.

http://www.dcode.fr/modular-exponentiation-calculus

Create new email account with password DiGsIg777, here instead of 777 must be the secret key.

Email me your tasks and revision papers; also send the copies to your new email account.

Write the secret key only in the password to the new email; do not share the secret key with anybody, including me.

**Deadline: 30.11.2016.**