16.12.2016 calculus individual worksheet:

s is your student number. k = s mod 10000. T = s mod 100. L = s mod 10.

1. Calculate using linear approximation.

2. Perform the linear approximation of sin(x) at s.

https://en.wikipedia.org/wiki/Linear\_approximation

3. F(x,y) = Tx2 + ky2 – s = 0, calculate y´(x).

4. F(x,y) = -x2/T+ y2/k– 1/s = 0, calculate y´(x).

5. Find

6. Calculate

7. Find T! and T-th Fibonacci number.

8. For what x is eLx = 0.5?

9. For what x is eLx = 0?

10. Two computer companies make computers whose power increases: the first computers increase their power 2T% every two years and the second T% every year. Which computer power grows faster? Why?

11. What gives the greater value 0.1T% decay in 2 years or 0.05T % every year? Why?

12. Calculate

13. Find

14. Calculate π and hangover for T terms in each of the series.