Calculus UTS midterm exam 2023, prepared by Michael Marchenko

1. Solve |k - Tx| < s. Classify shape Tx2 + mxy + Ly2 = 1.

2. Analyse exponential growth and decay.

3. Find logistic function P(t) for i = L+1 and R = t = M = L+2.

4. Find discriminant of y2=x3+Lx+T.Apply limit, derivative, integral.

5. Prove expression for derivative of x2 using limit, find

6. Find linear fit for (2, m2), (3, m3), (4, m4).

7. Find implicit function derivative Lx2 + Ty2 – k = 0.

8. Find inverse function derivative for Tx + L, curvature of Tx2+Lx.

9. Solve differential equations: y' = y, y' = Ty. Find T! and FT.

10. Find (a+b)L,

11. Find , error for T terms of Taylor series.

12. Expand sin(Tx) in Taylor Series, Tx in Fourier Series.