Fianl Exam

Jan 12, 2016, 10:10AM

1. (about 10 pts) Find the solutions for linear differential equations and/or separable differential equations.

2. (about 10 pts) Find the volume and surface area of the object obtained by rotating some region around the x axis or the y axis.

3. (about 10 pts) Order several elementary functions from slowest to fastest growing rate as $x \to \infty$ or $x \to 0^+$. Explain.

4. (about 10 pts) Write down the form of partial fraction expansion for $\dfrac{P(x)}{Q(x)}$, where P, Q are polynomials with $\deg P < \deg Q$. (what if $\deg P \geq \deg Q$?).

5. (about 60 pts) Evaluate all sorts of integrals. For example, those in problems 69-113 on p509. At least one problem for each techniques in section 8.1-8.4.

6. (about 30 pts) A few problems from Midterm 01 and Midterm 02.