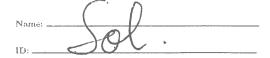


Math 1432, Section 12849 Spring 2014

HOMEWORK ASSIGNMENT 11 Due Date: 4/7/14 in Lab



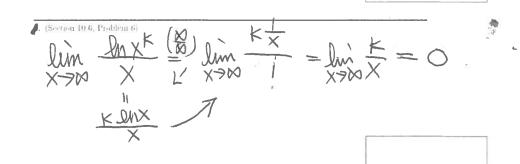
Instructions

- . Print out this tile and complete the problems. You must do all the problems!
- If the problem is from the text, the section number and problem number are in parantheses.
- · Use a blue or black pen or a pencil (dark).
- · Write your solutions in the spaces provided. You must show work in order receive credit for a problem.
- · Remember that your homework must be complete, neatly written and stapled.
- · Submit the completed assignment to your Teaching Assistant in lab on the due date.
- If you do not do all of the problems, then your recitation quiz from the previous Friday will automatically become a ZERO.

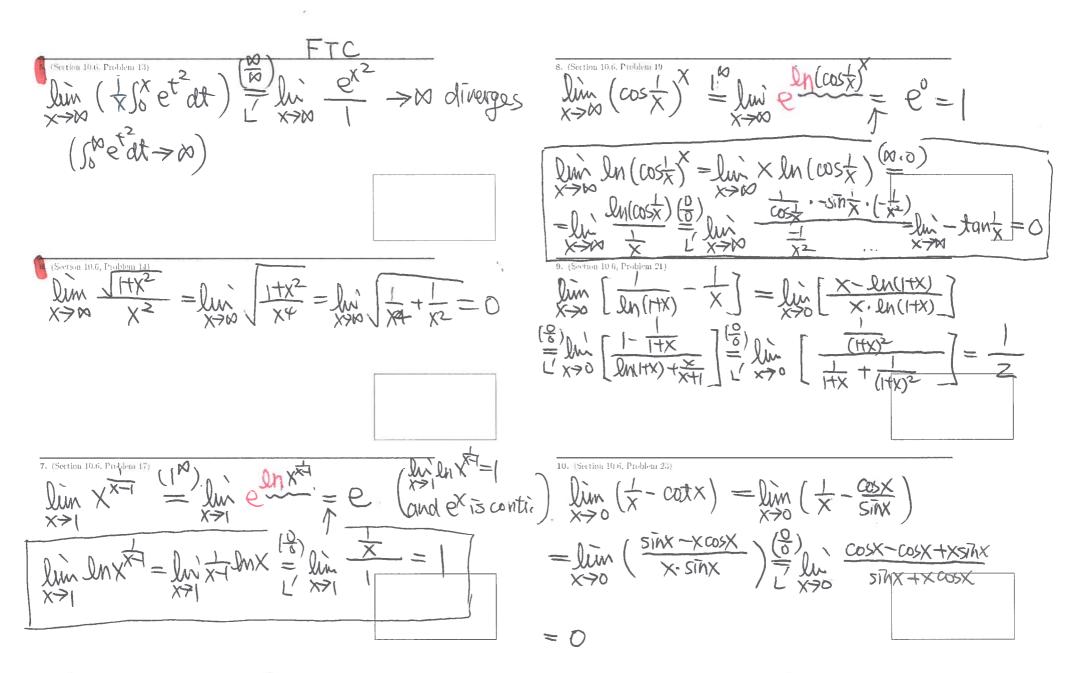
1. (Section 10.6, Problem 3)
$$(\frac{x}{1})$$
 $(\frac{x}{1})$ $(\frac{x}{1})$

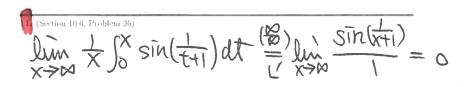
2. (Section 10.6, Problem 5)

$$\lim_{X \to \infty} \chi^2 = \lim_{X \to \infty} \chi^2$$



4. (Section 10.6, Problem 11)
$$\lim_{X \to 0} \left[\frac{1}{X} \left(\frac{1}{X} | X| \right) \right] = \lim_{X \to 0} \frac{\left(\frac{1}{X} | X| \right)}{\frac{1}{X}} = \lim_{X \to 0} \frac{2 \cdot \ln |X|}{\frac{1}{X}} = \lim_{X \to 0} \frac{2 \cdot \ln |X|}$$





$$\lim_{X \to \infty} (X^{2}+1)^{1} = \lim_{X \to \infty} (X^{2}+1)^{2} = e^{3}$$

Find lim ln
$$(X^{3}H)^{\overline{MX}} = \lim_{X \to \infty} \lim_{X \to \infty} \lim_{X \to \infty} \lim_{X \to \infty} \frac{1}{X^{3}}$$

$$= \lim_{X \to \infty} \frac{3X^{3}}{X^{3}H} = 3$$

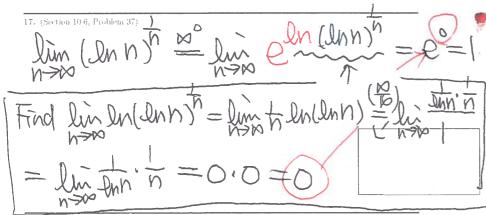
$$= \lim_{x \to 0} \frac{e^{x}}{e^{x}+1} = \lim_{x \to \infty} |-e^{x}+1| = |$$

Find
$$\lim_{x\to 0} \ln(e^x + 3x)^x = \lim_{x\to 0} \ln(e^x$$

15. (Section 10.6 Problem 33)
$$\lim_{X \to 1} \left(\frac{1}{\ln X} - \frac{1}{X - 1} \right) = \lim_{X \to 1} \left(\frac{X - X \ln X}{(X + 1) \ln X} \right)$$

$$\left(\frac{\partial}{\partial} \right) = \left(\frac{1 - \ln X - 1}{X - 1} \right) \cdot \frac{1}{X - 1} \cdot \frac{1$$

$$\lim_{N \to \infty} \frac{N^{k}}{2^{n}} \frac{N^{k}}{2^{n}} \lim_{N \to \infty} \frac{K n^{k-1}}{2^{n}} \frac{K n^{k-1}}$$



18. (Section 10.7. Problem 3)
$$\int_{0}^{\infty} \frac{dx}{dtx^{2}} = \lim_{b \to \infty} \int_{0}^{b} \frac{dx}{dtx^{2}} = \lim_{b \to \infty} \frac{1}{2} \frac{tan(\frac{x}{2})}{b} = \frac{1}{2} - \frac{1}{2} - \frac{1}{2} = \frac{1}{2}$$

$$\int_{0}^{\infty} \frac{dx}{dtx^{2}} = \lim_{b \to \infty} \int_{0}^{b} \frac{dx}{dtx^{2}} = \lim_{b \to \infty} \frac{1}{2} \frac{tan(\frac{x}{2})}{b} = \frac{1}{2} - \frac{1}{2} - \frac{1}{2}$$

$$\int_{0}^{\infty} \frac{dx}{dtx^{2}} = \lim_{b \to \infty} \int_{0}^{b} \frac{dx}{dtx^{2}} = \lim_{b \to \infty} \frac{1}{2} \frac{tan(\frac{x}{2})}{b} = \frac{1}{2} - \frac{1}{2} - \frac{1}{2}$$

$$\int_{0}^{\infty} \frac{dx}{dtx^{2}} = \lim_{b \to \infty} \int_{0}^{b} \frac{dx}{dtx^{2}} = \lim_{b \to \infty} \frac{1}{2} \frac{tan(\frac{x}{2})}{b} = \frac{1}{2} - \frac{1}{2} - \frac{1}{2}$$

$$\int_{0}^{\infty} \frac{dx}{dtx^{2}} = \lim_{b \to \infty} \int_{0}^{b} \frac{dx}{dtx^{2}} = \lim_{b \to \infty} \frac{1}{2} \frac{tan(\frac{x}{2})}{b} = \frac{1}{2} - \frac{1}{2} - \frac{1}{2}$$

$$\int_{0}^{\infty} \frac{dx}{dtx^{2}} = \lim_{b \to \infty} \int_{0}^{b} \frac{dx}{dtx^{2}} = \lim_{b \to \infty} \frac{1}{2} \frac{tan(\frac{x}{2})}{b} = \frac{1}{2} - \frac{1}{2} - \frac{1}{2}$$

$$\int_{0}^{\infty} \frac{dx}{dtx^{2}} = \lim_{b \to \infty} \int_{0}^{b} \frac{dx}{dtx^{2}} = \lim_{b \to \infty} \frac{1}{2} \frac{tan(\frac{x}{2})}{b} = \frac{1}{2} - \frac{1}{2} - \frac{1}{2}$$

$$\int_{0}^{\infty} \frac{dx}{dtx^{2}} = \lim_{b \to \infty} \int_{0}^{b} \frac{dx}{dtx^{2}} = \lim_{b \to \infty} \frac{1}{2} \frac{tan(\frac{x}{2})}{b} = \frac{1}{2} - \frac{1}{2} - \frac{1}{2}$$

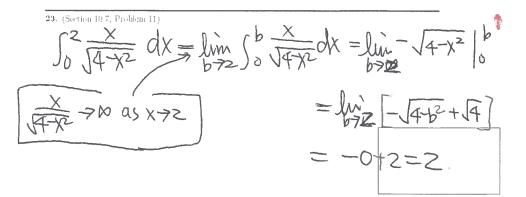
$$\int_{0}^{\infty} \frac{dx}{dtx^{2}} = \lim_{b \to \infty} \int_{0}^{b} \frac{dx}{dtx^{2}} = \lim_{b \to \infty} \frac{1}{2} \frac{tan(\frac{x}{2})}{b} = \frac{1}{2} - \frac{1}{2} -$$

$$=\lim_{b\to \infty} \frac{1}{2} \tan(\frac{x}{2}) \Big|_{b}^{b}$$

$$=\lim_{b\to \infty} \frac{1}{2} \tan(\frac{x}{2})$$

22. (Section 10.7, Problem 9)

$$\int \frac{dX}{\sqrt{1+X^2}} = \lim_{N \to \infty} \int \frac{dX}{\sqrt{1+X^2}} = \lim_{N \to \infty} \int$$

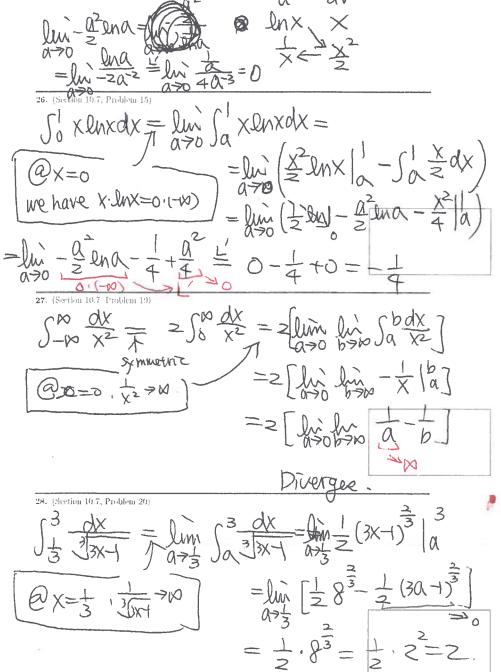


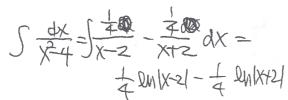
24. (Section 10.7, Problem 13)

$$\int_{e}^{\infty} \frac{\ln x}{x} dx = \lim_{b \to \infty} \int_{e}^{b} \frac{\ln x}{x} dx = \lim_{b \to \infty} \frac{\ln x}{2} \Big|_{e}^{b}$$

$$= \lim_{b \to \infty} \left(\frac{\ln b}{2} \right)^{2} - \frac{1}{2} \Rightarrow 0 \text{ itemper}$$

So $\frac{dx}{x \ln x} dx = \lim_{b \to \infty} \int_{e}^{b} \frac{dx}{x \ln x} = \lim_{b \to \infty} \ln \ln \ln x \Big|_{e}^{b}$ $= \lim_{b \to \infty} \ln (\ln b) - \ln (\ln e)$ $= \lim_{b \to \infty} \ln (\ln b) - 0 \Rightarrow d \ln e$





 $\int_{-3}^{1} \frac{dx}{x^{2}+1} = \int_{-3}^{-2} \frac{dx}{x^{2}+1} + \int_{-2}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right] \int_{-3}^{1} \frac{dx}{x^{2}+1} = \lim_{x \to +\infty} \left[\int_{-3}^{1} \frac{dx}{x^{2}+1} \right]$ $\frac{1}{X^{2}+1-0} = \frac{1}{X^{2}+1} = \frac{1}{X^{2}$

= = -0 - lu sb dx

30. (Section 10.7 Problem 33)
$$\int_{0}^{1} \frac{e^{iX}}{iX} dX = \lim_{q \to 0} 2e^{iX} \Big|_{0}^{1} = \lim_{q \to 0} \left[2e - 2e^{iX} \right]$$

$$= 2e - 2$$

33.3 Section 11.1 Problem 1)

$$= 1 + 4 + 7 = 12$$
.

$$\int_{0}^{\frac{\pi}{2}} \frac{\cos x}{\sqrt{\sin x}} dx = \lim_{\alpha \to 0} \int_{0}^{\frac{\pi}{2}} \frac{\cos x}{\sqrt{\sin x}} dx$$

$$= \lim_{\alpha \to 0} 2\sqrt{\sin x} \Big|_{0}^{\frac{\pi}{2}} = \lim_{\alpha \to 0} 2\sqrt{1 - 2\sqrt{\sin \alpha}} dx$$

$$= 2 \lim_{\alpha \to 0} 2\sqrt{1 - 2\sqrt{\sin \alpha}} dx$$

$$= 2 \lim_{\alpha \to 0} 2\sqrt{1 - 2\sqrt{\sin \alpha}} dx$$

34. (Section 11.1, Problem 6)
$$\frac{4}{2} = \frac{1}{3^{24}} + \frac{1}{3^{34}} + \frac{1}{3^{44}}$$

$$= \frac{1}{3} + \frac{1}{3^{2}} + \frac{1}{3^{3}}$$

$$= \frac{3}{4} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} = \frac{13}{3^{3}}$$

$$= \frac{3}{3} + \frac{3}{3} + \frac{1}{3} = \frac{13}{27}$$

$$|+3+5+7+111+2|$$

pateum is $2K-1$
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$$=\frac{1}{z}$$

Final term goes to a since 1 >0

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