

Math 291
Week 5 Lab

Instructions: Use \LaTeX to typeset a document containing each component described below. Turn in your lab by emailing it to jamesju@mnstate.edu or by uploading it to the appropriate assignment folder on the course D2L page. You should email both your raw TeX (.tex) file and your compiled document (in either .ps or .pdf form). Make sure that your name appears somewhere in your file name. You will be graded on both your raw TeX code and the accuracy of your compiled document. This lab is due by 5:00pm on Friday, February 17th.

- Set up the page layout and add a Title Block as you were instructed to do in your previous labs.
- Make sure to call both the “amssymb” and “amsmath” packages.
- Typeset each of the following:

x	y	$f(x, y)$
0	0	1
1	0	2
0	1	5
1	1	3

p	q	r	$\neg r$	$(q \rightarrow \neg r)$	$p \rightarrow (q \rightarrow \neg r)$
T	T	T	F	F	F
T	T	F	T	T	T
T	F	T	F	T	T
T	F	F	T	T	T
F	T	T	F	F	T
F	T	F	T	T	T
F	F	T	F	T	T
F	F	F	T	T	T

p	q	r	$p \wedge q$	$p \wedge q \wedge r$	$\neg(p \wedge q \wedge r)$
T	T	T	T	T	F
T	T	F	T	F	T
T	F	T	F	F	T
T	F	F	F	F	T
F	T	T	F	F	T
F	T	F	F	F	T
F	F	T	F	F	T
F	F	F	F	F	T

$$T(x) = \begin{cases} 0.10x & \text{if } x \leq 8,025, \\ 802.5 + (x - 8,025)0.15 & \text{if } 8,025 < x \leq 32,550, \\ 4,481.25 + (x - 32,550)0.25 & \text{if } 32,550 < x \leq 78,850, \\ 16,056.25 + (x - 78,850)0.28 & \text{if } 78,850 < x \leq 164,550, \\ 40,052.25 + (x - 164,550)0.33 & \text{if } 164,550 < x \leq 357,700, \text{ and} \\ 103,791.25 + (x - 357,700)0.35 & \text{if } 357,700 < x. \end{cases}$$

I ♥ cute little teeny matrices like this one: $\begin{pmatrix} \spadesuit & \diamondsuit \\ \clubsuit & \heartsuit \end{pmatrix}$.

$$\begin{bmatrix} 1 & -1 \\ -1 & 1 \end{bmatrix} \quad \begin{vmatrix} \frac{1}{2} & \frac{1}{4} \\ -\frac{1}{4} & \frac{1}{2} \end{vmatrix} \quad \begin{vmatrix} e^x & e^{-x} \\ e^{-x} & e^x \end{vmatrix} \quad \begin{Bmatrix} \ominus & \oplus \\ \ominus & \otimes \end{Bmatrix}$$

Note: The corrected \LaTeX code for the debugging assignment is due on Friday, February 24th. Only files that compile with no errors and whose output matches the posted pdf of the corrected file will receive full credit.