

Math 291
Lab 11
Due Monday April 16, 2018

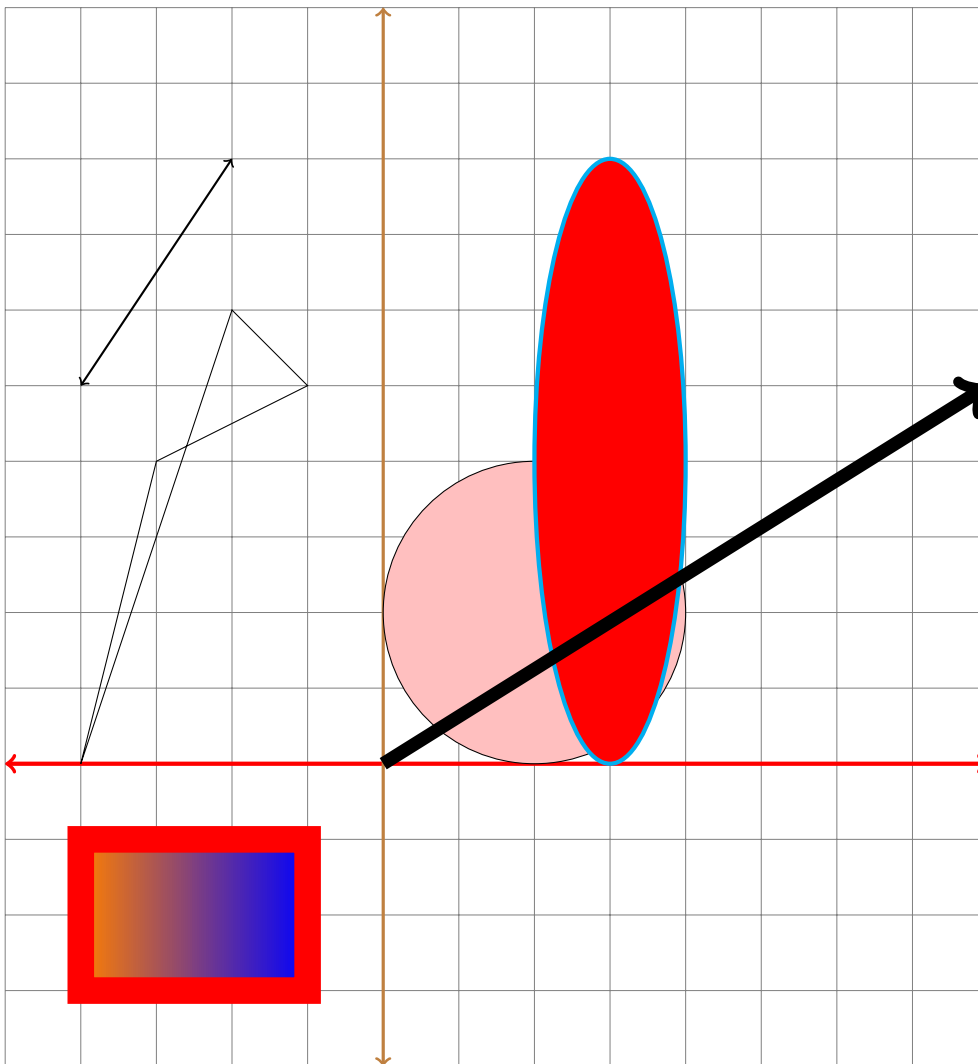
Instructions: Turn in your lab by emailing it to fagerstrom@mnstate.edu. You should email both your raw \TeX (.tex) file and your compiled document (in .dvi, .ps, or .pdf form).

You will be graded on both your raw \TeX code and the accuracy of your compiled document.

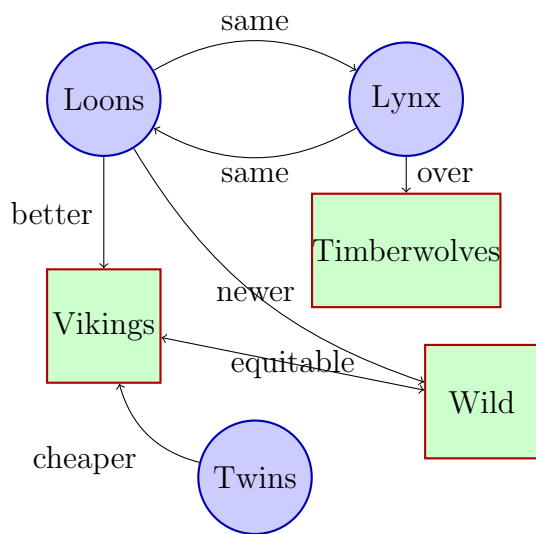
Name your file in the format of JaneDoeLab11.tex

Include the normal name block.

1. Use $\text{\textit{tikZ}}$ to create the following picture. Make sure that you pay attention to colors, arrows, sizes, order in which items are layered over each other, etc. Note that the red axis and the ellipse are ultra thick, the brown axis is very thick, the ray has a line width of 5 pts, and the rectangle has a line width of 10 pts. Also, the circle is only 25% red.



2. Use $\text{\textit{tikZ}}$ to create the following picture. Make sure that you pay attention to colors, arrows, nodes, sizes, etc. Use two styles for creating the nodes. The colors are a 70/30 blue/black mix for the edges with a fill of 20% blue. The other nodes have a color of a 30/70 black/red mix for the edges with a fill of 20% green.



3. Draw a third picture of your own devising in a single `tikZ` environment. You need to have at least six commands. Each command can have more than one piece, but you have to use each of the following somewhere at least once: `node`, `edge`, `circle`, `cycle`, `filldraw`, `shadedraw`, `grid`.