DUE: Wednesday, May 11 at 10:15

Use Maple to do all of the following. See my examples in file <u>Contour plots 2</u> in the Assignment for Section 14.1 on the course web site.

Use Text mode to enter your name and date at the top of your project.

A multivariate function is given by

$$f = \frac{xy(x^2 - y^2)}{780}. \tag{1}$$

1. Use `plot3d` to plot the surface f on the region $-10 \le x \le 10$, $-10 \le y \le 10$. Use the `patchcontour` style, unconstrained scaling and boxed axes.

2. On the same region, use `contourplot` to plot the surface f along with contours (level curves) $z = -4, -3, -2, -1, 0, 1, 2, 3, 4$. Use a curve `thickness` of 3.

3. On the same region, plot the surface f along with the contours in the $xy-$plane corresponding to $z = -4, -3, -2, -1, 0, 1, 2, 3, 4$. Position the contour plot to be 10 units below the $xy-$plane. Use a curve `thickness` of 3.

- Use the mouse to size and rotate the plots so that they are reasonably sized and oriented when printed—not too small but large enough to show important features clearly.

- Use the asterisk $*$ for all multiplications! (Maple usually displays it as a dot.)

- Insert text comments to enumerate each part of this assignment.

- Print single-sided pages. Staple all pages in their proper order.