Above we see several level curves of the function $f(x, y) = xy - 2x$, plotted together with the gradient field $\nabla f(x, y) = (y - 2)\vec{i} + x\vec{j}$. Note the orthogonality of the gradient field to the level curves. The lines $x = 0$ and $y = 2$ divide the plane into four quadrants, and the sign of $y - 2$ and of x determine the direction of the gradient vector. *In this picture the lengths of the gradient vectors have been scaled so that the longest vector appearing has length one.* This has been done so as not to clutter the drawing.

It is useful also to compare the graph of level curves and the gradient field with a graph of the surface $z = x(y - 2)$, which is shown below. Recall that each gradient vector points in the direction of steepest increase of height of the surface.