Worksheet #11; date: 02/22/2018
MATH 53 Multivariable Calculus

1. Let's take it easy today!

2. At what point does the curve have maximum curvature? What happens
   to the curvature as $x \to \pi/2$?

   $$y = \ln(\sec x), \quad 0 \le x < \frac{\pi}{2}.$$

3. Find the tangential and normal components of the acceleration vector.

   $$\mathbf{r}(t) = t\mathbf{i} + 4e^{t/2}\mathbf{j} + 2e^t\mathbf{k}$$

4. *(Stewart 14.1.52)* Draw a contour map of the function showing several
   level curves.
   $$f(x, y) = \frac{y}{x^2 + y^2}.$$

5. *(Stewart 14.1.75; modified)* Draw a contour map of

   $$f(x, y) = \frac{x + y}{x^2 + y^2}.$$

   Graph the function in 3D.