

### MATH 243: SECTION 10.1 GROUPWORK

For the following, attempt to sketch the curves by hand before using computer tools.

- (1) Consider the parametric curve given by the parametric equations

$$x = \frac{e^x - e^{-x}}{2}$$
$$y = \frac{e^x + e^{-x}}{2}$$

where  $-\infty < t < \infty$ . Sketch a graph of this curve.

- (2) Consider the parametric curve given by the parametric equations

$$x = -\sec t$$
$$y = \tan t$$

where  $-\pi/2 < t < \pi/2$ . Sketch a graph of this curve. Compare to the curve from the previous problem. Do you know another name for these curves?

- (3) Consider the parametric curve given by the parametric equations

$$x = e^t y = e^{-3t}$$

where  $-\infty < t < \infty$ . Eliminate the parameter to find a Cartesian equation for the curve just in terms of  $x$  and  $y$ .