Math 1110: **Review**   Oct 25 (Fri)
Created by Jun Le Goh modified by Yuwen Wang

Consider attending one of the review sessions by Quincy Loney:
10/28 MLT 228 4:00-6:00, 10/29 MLT 251 2:55-4:10, 10/29 MLT 251 4:30-5:45

1. State the chain rule (making sure to include the hypotheses).

2. What is the definition of "f is differentiable at a point x"?

3. If f is differentiable at x, what is the geometrical interpretation of its derivative? How is that related to the secant lines of f?

4. Sketch the derivative of the function below, on the same axes.
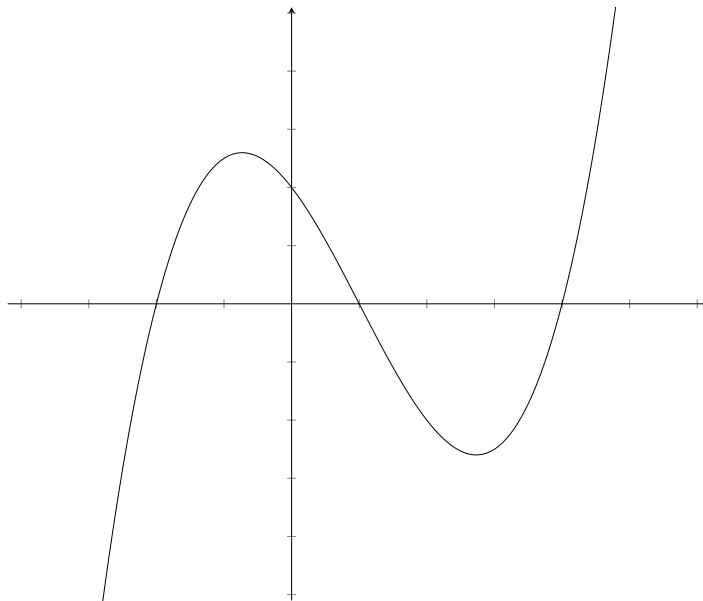
5. Find all points on the curve $y^4 = y^2 - x^2$ where the slope of the tangent line is zero. *The graph of the curve crosses itself at* $(0,0)$ *so there is no tangent line there.*

6. Compute the derivatives of the following functions. On what domain is your answer valid?

   (a) $5^{\sqrt{x}}$

   (b) $\arccos(1/x)$

7. Using linearization, compute an approximation for $\sin(3.1)$.