**1.*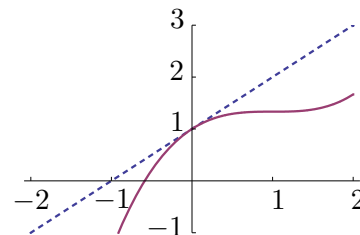* [10 points]   Suppose that the first and third degree Taylor polynomials, $P_1(x)$ and $P_3(x)$, approximating a function $g(x)$ at $a = 0$ are given in the graph to the right, below.

a. [6 points] Using these Taylor polynomials, what are $g(0)$ and $g'(0)$? What is the sign of $g''(0)$?

b. [4 points] Could $g(x)$ be the function $1 + \sin(x)$? Why or why not?