Let $f(x) = \sin(x)$ and
let $P_5(x)$ be the 5th order Taylor polynomial for $f(x)$ at $x_0 = \pi$.

1. Find $P_5(x)$

2. Verify your answer by graphing $P_5(x)$ and $f(x)$ on the same set of axes.

3. Use $P_5(x)$ to find an approximation for $\sin(6)$. Will this be larger or smaller than the actual value of $\sin(6)$?