Problem 3

In each of Problems 1 through 6, sketch the graph of the given function on the interval \( t \geq 0 \).

\[ g(t) = f(t - \pi)u_\pi(t), \quad \text{where } f(t) = t^2 \]

Solution

This function can be written in terms of the more familiar Heaviside function, \( H(t) \), which is defined to be 1 if \( t > 0 \) and 0 if \( t < 0 \).

\[ g(t) = (t - \pi)^2 H(t - \pi) \]