Problem 1. Use Simpson’s method with \( n=6 \) to approximate the following integral:

\[
\int_{0}^{3} \frac{1}{1+t^3} \, dt.
\]

(Round to six decimal places.)

Problem 2. 1. Show that the second derivative of \( y = e^{x^2} \) is bounded by \( 6e \) on the interval \([0, 1]\).

2. Use the bound \( K = 6e \) to find the least integer \( n \) that will guarantee that \( T_n \) will approximate

\[
\int_{0}^{1} e^{x^2} \, dx
\]

to within 0.0001.