1. Find the inverse Laplace transform of

\[ \frac{3s + 2}{s^2 + 4s + 6} \]
2. Solve the initial value problem

\[ x'' + x = u_6(t), \quad x(0) = 1, \quad x'(0) = 0 \]

(Note that \( u_6(t) \equiv u \left( t - \frac{\pi}{6} \right) \))
3. Solve the initial value problem

\[ x' = x + \cos t, \quad x(0) = 1 \]
4. Find the Laplace transform of the function depicted in the graph