

This is a group quiz, so you may collaborate with other students. You may use your class notes and the textbook, and a calculator. You only need to show as much information as you would need to recall how you did the problem. Circle your answers.

1. Use complex exponentials to compute $\int e^{-t} \sin(2t) dt$.
2. Use the definition of the Laplace transform and the complex exponential to compute the Laplace transform of $\sin(3t)$.
3. Show (by finding K, a, M from the definition) that t^4 is of exponential order. You may use any Lemmas from class without proof (but you should be explicit about using them).
4. Complete the square to get an expression of the form: $k(s + a)^2 + b$

$$2s^2 + 3s + 4$$

5. Show using integration by parts, that

$$\mathcal{L}(y''') = s^3 Y(s) - s^2 y(0) - sy'(0) - y''(0)$$