Esercizi sui numeri complessi

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Abstract

1. Calcolare
$$\lim_{t \to 0} \frac{e^{3jt} - 1}{t}$$

2. Provare che
$$\lim_{t \to +\infty} e^{(3j-5)t} = 0$$

3. Calcolare $De^{-jt}, De^{-4jt}, De^{4jt}, D(4t^3 + 5jt^2), De^{-(j+5)t}, De^{-jt^2}$

4. Calcolare le primitive di $f(t) = 0, f(t) = j, f(t) = 5 - 3j, f(t) = 1, f(t) = e^{-2jt}, f(t) = e^{(1-2j)t}, f(t) = e^{-(1-2j)t}$

5. Calcolare
$$\int_0^{2\pi} 5je^{-2jt}dt$$
$$\int_0^{\pi} \frac{5 + 2j}{j} e^{-(1-2j)t}dt$$