

Worksheet 11

Due: Tuesday, November 4

Let

$$\begin{aligned}f &= 2e^{-3ix} - e^{-ix} + 3e^{ix}, \\g &= e^{-3ix} - e^{ix} + 5e^{2ix}, \text{ and} \\h &= \cos x + \sin 2x.\end{aligned}$$

1. Compute $\langle f, g \rangle$.
2. Compute $\|g\|^2$.
3. Compute $\langle f, h \rangle$.
4. Compute $\langle g, h \rangle$.