Part IB — Methods Example Sheet 1

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QUESTION 1

We are given

$$\underbrace{\ddot{\theta} + 2p\dot{\theta} + (p^2 + q^2)}_{\mathcal{L}}\,\theta = f(t)$$

with $\theta(0) = \dot{\theta}(0) = 0$, and $p > 0, q \neq 0$.

Want to find G such that $\mathcal{L}G = \delta(t - \tau)$, so that for each value of τ, the Green's function will solve the homogeneous equation $LG = 0$ whenever $t \neq \tau$.

QUESTION 2

QUESTION 3

QUESTION 4

QUESTION 5

QUESTION 6

QUESTION 7

QUESTION 8

QUESTION 9

QUESTION 10

QUESTION 11

QUESTION 12