

SET 2–DUE 28 JANUARY

“I don’t like solid state physics, although I invented it.” – W. Pauli

1) [20 points] Jackson 9.2

2) [20 points] Jackson 9.16. Consider the “far field” case only. Use $I = I_0 \sin(2\pi z/d) \exp(-i\omega t)$.

In part (a), sketch the angular distribution, do not give a detailed plot. I evaluated the integral

$$\int_0^1 dx \frac{\sin^2 \pi x}{1 - x^2}$$

numerically.

3) [20 points] Jackson 9.17. You can “borrow” formulas 9.50-9.52.

If you are working in CGS; R in ohms (in MKS) is R in CGS times $30c$.