

Assignment #1

(due to Wednesday – Jan 24, 2018)

1. Problem 5.1, Jackson textbook.
(10 Points)
2. Problem 5.3, Jackson textbook.
(15 Points)
3. Find the vector potential of an infinite solenoid with N turns per unit length, radius R , and current I .
(15 Points)
4. Find the magnetic vector potential at a point between two long, straight wires carrying the same current I , in opposite directions.
(15 Points)
5. Problem 6.11, Jackson textbook.
(15 Points)
6. Problem 6.14 (a), Jackson textbook.
(20 Points)
7. Calculate the Poynting vector and its divergence for an infinitely long cylindrical conductor with radius a carrying uniform current density J due to a uniform electric field E parallel to the axis of the conductor inside the conductor.
(10 Points)