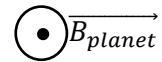


Discussion Week 8 Question 1

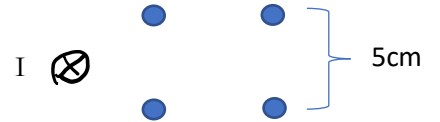
In the research lab of Dr. Gaius Baltar (located in Caprica City) the magnetic field of the planet Caprica is horizontal due south with a magnitude of $50\mu\text{T}$. Dr. Baltar has a conducting wire set up from a disassembled Cylon. If the net magnetic field is zero 5 cm above the horizontal wire, what is the magnitude and direction of the current in the Cylon wire?



Current carrying wire

Discussion Week 8 Question 2

Petty officer Cally Henderson is working on the electrical components of a Viper. In the engine, there are four long straight 0.015m radius wire with current of 10 A into the page arranged in a square. What is the magnetic force per meter of wire on the Viper's top right wire?



Discussion Week 8 Question 3

Lt. Kara “Starbuck” Thrace is stranded on a planet with a damaged Clyon Raider. Inside the Raider, there is an exposed wire of circular cross section 28 cm^2 carrying a current of 100 A out of the page. What is the strength of the magnetic field at the center of the wire, 1 cm from the center, the wire’s surface, and 2 cm away from the surface?

