

Warm up Problem Set 9

Question

1. HRW6 30.TB.02. [119973] A "coulomb" is:
 - (a) one ampere per second
 - (b) an abbreviation for a certain combination of kilogram, meter and second
 - (c) the quantity of charge which will exert a force of 1 N on a similar charge at a distance of 1 m
 - (d) the amount of current in each of two long parallel wires separated by 1 m, which produces a force of 2×10^{-7} N per meter
 - (e) the amount of charge which flows past a point in one second when the current is 1 A

Answer:

- (e) The amount of charge which flows past a point in one second when the current is 1A.

Question

2. HRW6 30.TB.03. [119974] Electrons are going around a circle in a counterclockwise direction as shown.

At the center of the circle they produce a magnetic field that is:

- (a) to the left
- (b) into the page
- (c) out of the page
- (d) zero
- (e) to the right

Answer:

(b) Into the page

Question

3. HRW6 30.TB.07. [119978] Lines of the magnetic field produced by a long straight wire carrying a current:

- (a) are circles concentric with the wire
- (b) leave the wire radially
- (c) are in the direction of the current
- (d) are lines similar to those produced by a bar magnet
- (e) are opposite to the direction of the current

Answer:

- (a) Are circles concentric with the wire