Magnetic field due to volume currents. Consider an arbitrary distribution of volume currents in a vacuum and the magnetic flux density vector due to these currents at an arbitrary point in space. If the magnitude of the current density vector is doubled everywhere, the magnetic flux density vector consider

(A) becomes twice large in magnitude and keeps the same direction.
(B) becomes larger in magnitude (not always twice) and keeps the same direction.
(C) becomes large in magnitude and may change direction.
(D) becomes twice larger in magnitude and may change direction.
(E) may become larger or smaller in magnitude and may change direction.

Solution: (A)
Answer: (A)