Magnetic flux through a conical surface. Consider an imaginary open conical surface in a uniform steady magnetic field of flux density B = 1 T. The height (length) of the cone is $h = 20\,\text{cm}$ and the radius of its opening is $a = 10\,\text{cm}$. The vector $\mathbf{B}$ makes an angle $\alpha = 45^0$ with the cone axis as in Fig.Q4.12. If h is doubled (without changing a, B, and α), the magnetic flux through the conical surface (oriented downward)

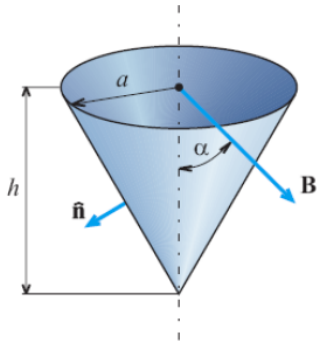

Figure Q4.12 Open conical surface in a uniform magnetic field; for Question 4.19.

(A) increases.
(B) decreases.
(C) remains the same.

Solution: (C)
Answer: (C)