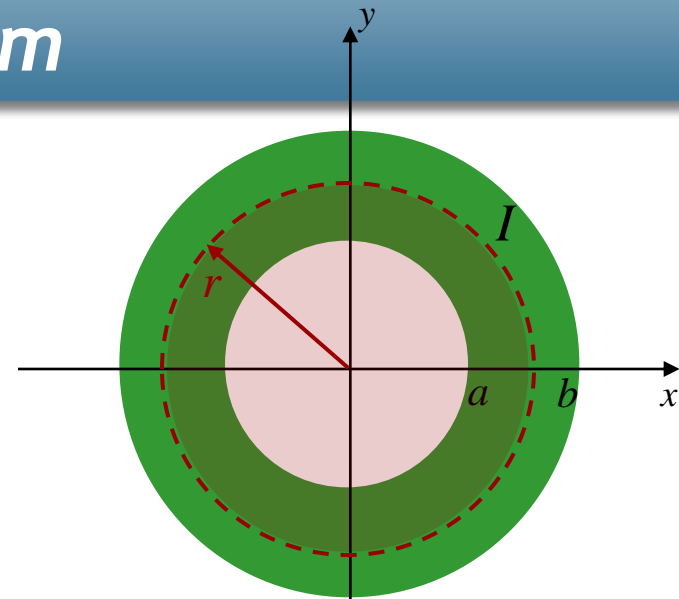


# Example Problem

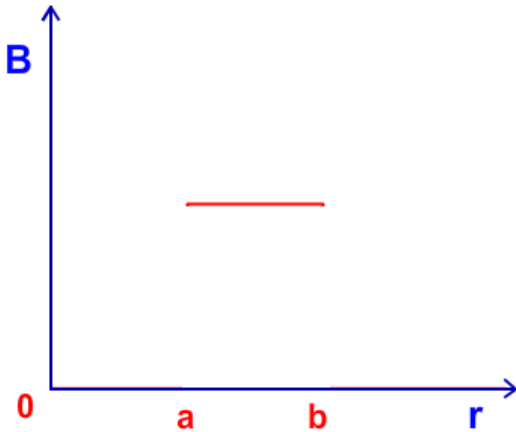
What does  $|B|$  look like for  $a < r < b$ ?

$$\oint \vec{B} \cdot d\vec{\ell} = \mu_o I_{enc} \quad \longrightarrow \quad B \cdot 2\pi r = \mu_o \cdot jA_{enc}$$

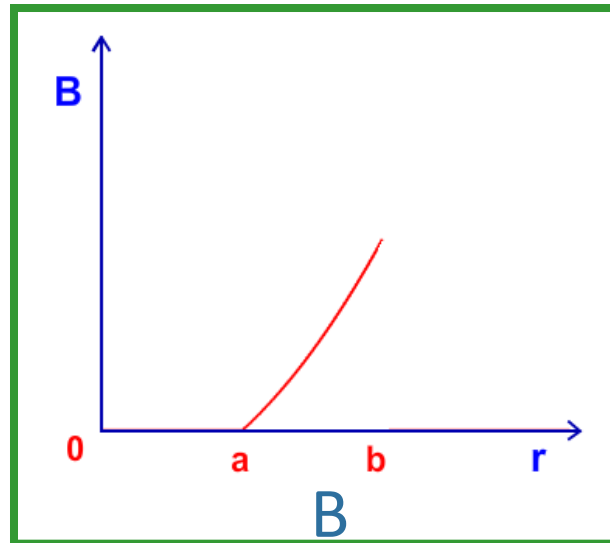


$$B \cdot 2\pi r = \mu_o \cdot \frac{I}{\pi(b^2 - a^2)} \cdot \pi(r^2 - a^2) \quad \longrightarrow \quad B = \frac{\mu_o I}{2\pi r} \cdot \frac{(r^2 - a^2)}{(b^2 - a^2)}$$

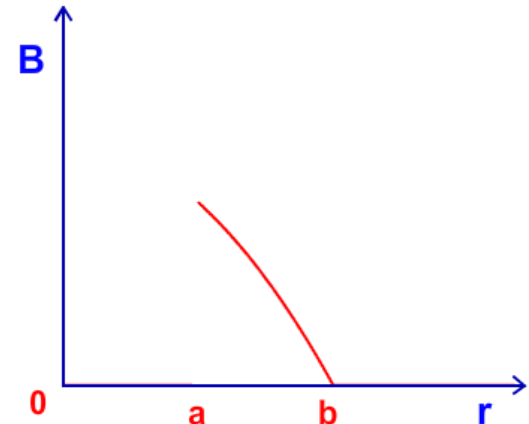
Starts at 0 and increases almost linearly



A



B



C