Electric Field

$$E\,2\pi r = -\pi r^2 . B \quad \Rightarrow \quad E = -\frac{\mu_0 \dot{k}(t) . r}{2}$$

$$E = \begin{cases} -\frac{\mu_0 . \dot{k} R^2}{2r}\hat{\phi}, & r > R \\ -\frac{\mu_0 . \dot{k}\, r}{2}\hat{\phi}, & r < R \end{cases}$$

$$\nabla \times \vec{B} = \frac{1}{c}\left(4\pi J + \frac{dE}{dt}\right)$$

$$\frac{4\pi J}{c}$$

(?)

$$\nabla \times \vec{B} = \frac{\text{circulation}}{\text{AREA}} = \frac{B.(2\pi r)}{\pi r^2} = \frac{1}{c}\left(4\pi J + \frac{\mu_0 r}{2}.\ddot{k}(t)\right)$$

I am not sure if this is right,
I can't get past this point

$$\nabla \times \vec{B} = \frac{B.2}{r} = \frac{1}{c}\left(4\pi J + \frac{\mu_0}{2} r\,\ddot{k}(t)\right)$$

$$\frac{2B}{r} = \frac{4\pi J}{c} + \frac{\mu_0 . r\,\ddot{k}(t)}{2}$$

$|\overline{J = k}|$?