$$f = f$$

$$A = A^r \boldsymbol{e_r} + A^\theta \boldsymbol{e_\theta} + A^\phi \boldsymbol{e_\phi}$$

$$B = B^{r\theta} \boldsymbol{e_r} \wedge \boldsymbol{e_\theta} + B^{r\phi} \boldsymbol{e_r} \wedge \boldsymbol{e_\phi} + B^{\phi\phi} \boldsymbol{e_\theta} \wedge \boldsymbol{e_\phi}$$

$$\boldsymbol{\nabla} f = \partial_r f \boldsymbol{e_r} + \frac{1}{r} \partial_\theta f \boldsymbol{e_\theta} + \frac{\partial_\phi f}{r \sin(\theta)} \boldsymbol{e_\phi}$$

$$\boldsymbol{\nabla} \cdot A = \frac{1}{r} \left(r \partial_r A^r + 2A^r + \frac{A^\theta}{\tan(\theta)} + \partial_\theta A^\theta + \frac{\partial_\phi A^\phi}{\sin(\theta)} \right)$$

$$-I(\boldsymbol{\nabla} \wedge A) = \frac{1}{r} \left(\frac{A^\phi}{\tan(\theta)} + \partial_\theta A^\phi - \frac{\partial_\phi A^\theta}{\sin(\theta)} \right) \boldsymbol{e_r} + \frac{1}{r} \left(-r \partial_r A^\phi - A^\phi + \frac{\partial_\phi A^r}{\sin(\theta)} \right) \boldsymbol{e_\theta} + \frac{1}{r} \left(r \partial_r A^\theta + A^\theta - \partial_\theta A^r \right) \boldsymbol{e_\phi}$$

$$\boldsymbol{\nabla} \wedge B = \frac{1}{r} \left(r \partial_r B^{\phi\phi} - \frac{B^{r\phi}}{\tan(\theta)} + 2B^{\phi\phi} - \partial_\theta B^{r\phi} + \frac{\partial_\phi B^{r\theta}}{\sin(\theta)} \right) \boldsymbol{e_r} \wedge \boldsymbol{e_\theta} \wedge \boldsymbol{e_\phi}$$