1. Let $\vec{\boldsymbol{F}} = 3s\,\hat{\boldsymbol{s}}$.
   - Make a rough sketch of $\vec{\boldsymbol{F}}$.
   - Suppose you have a paddlewheel and dipped it into a pool that flowed according to $\vec{\boldsymbol{F}}$. Would the paddlewheel spin?
   - This is related to the line integral of $\vec{\boldsymbol{F}}$ around a closed path. Do you think the line integral would be positive negative or zero?
2. Let $\vec{\boldsymbol{G}} = \frac{1}{s}\hat{\boldsymbol{\phi}}$.
   - Make a rough sketch of $\vec{\boldsymbol{G}}$.
   - Suppose you have a paddlewheel and dipped it into a pool that flowed according to $\vec{\boldsymbol{G}}$. Would the paddlewheel spin?
   - This is related to the line integral of $\vec{\boldsymbol{G}}$ around a closed path. Do you think the line integral would be positive negative or zero?
3. The trait highlighted in #1 and #2 can be quantified by *curl*. In two dimensions, the curl of $F_s\hat{\boldsymbol{s}} + F_\phi\hat{\boldsymbol{\phi}}$ is $(\frac{1}{s}\frac{\partial}{\partial s}(sF_\phi) - \frac{\partial}{\partial \phi}F_s)\hat{\boldsymbol{z}}$.
   - Compute the curl for both $\vec{\boldsymbol{F}}$ and $\vec{\boldsymbol{G}}$.