

Classify each of the following vector field plots in two ways: HW52

① Is $\text{curl} > 0$, $\text{curl} < 0$, or $\text{curl} = 0$?

② Is $\text{div} > 0$, $\text{div} < 0$, or $\text{div} = 0$?

See the 8 plots on the following pages.

(These are the 2D curl & div:

$$\text{curl} \langle P, Q \rangle = Q_x - P_y \quad \& \quad \text{div} \langle P, Q \rangle = P_x + Q_y.)$$

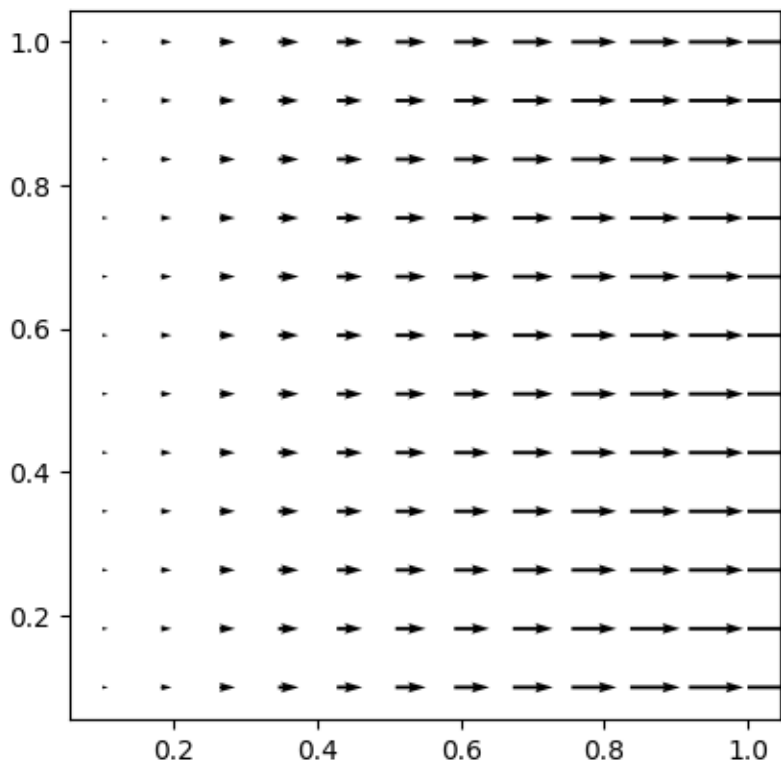
③ Compute $\text{curl} \vec{F}$ & $\text{div} \vec{F}$ at

$(x, y, z) = (1, 2, 3)$ where

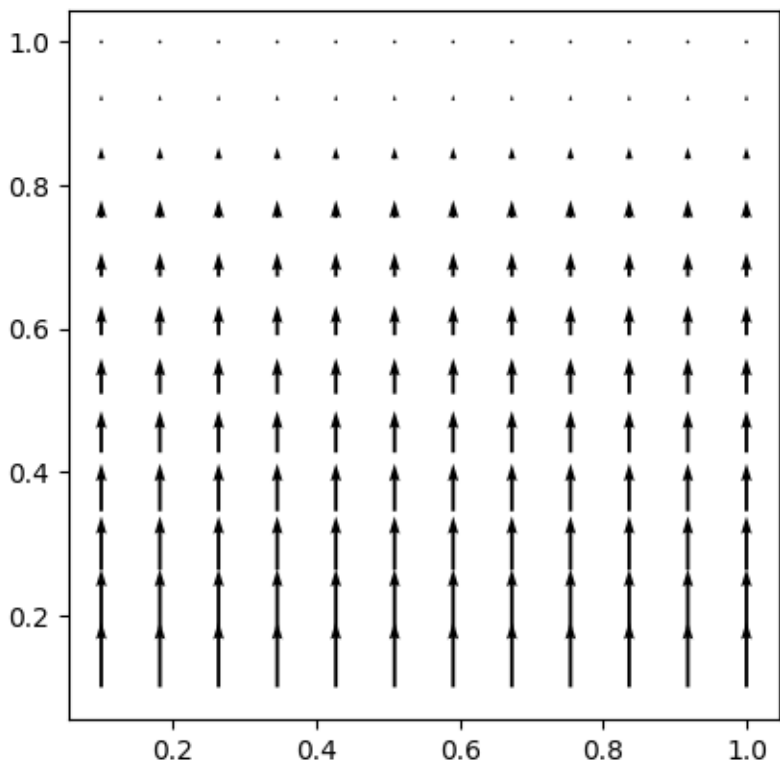
$$\vec{F} = \left\langle x^2 + yz, \quad xyz, \quad \frac{144}{x+y+z} \right\rangle.$$

(These are the usual 3D curl & div.)

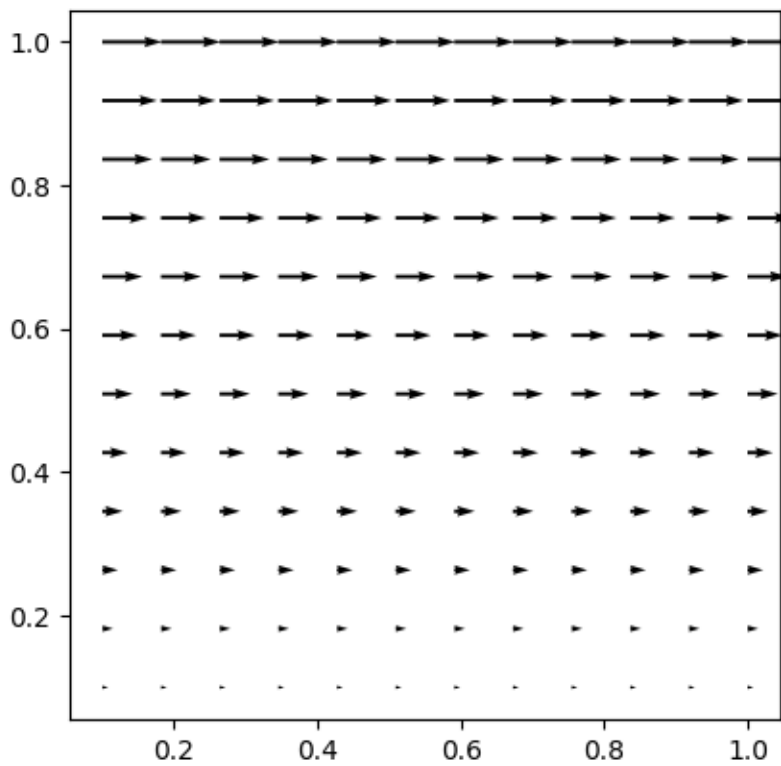
A



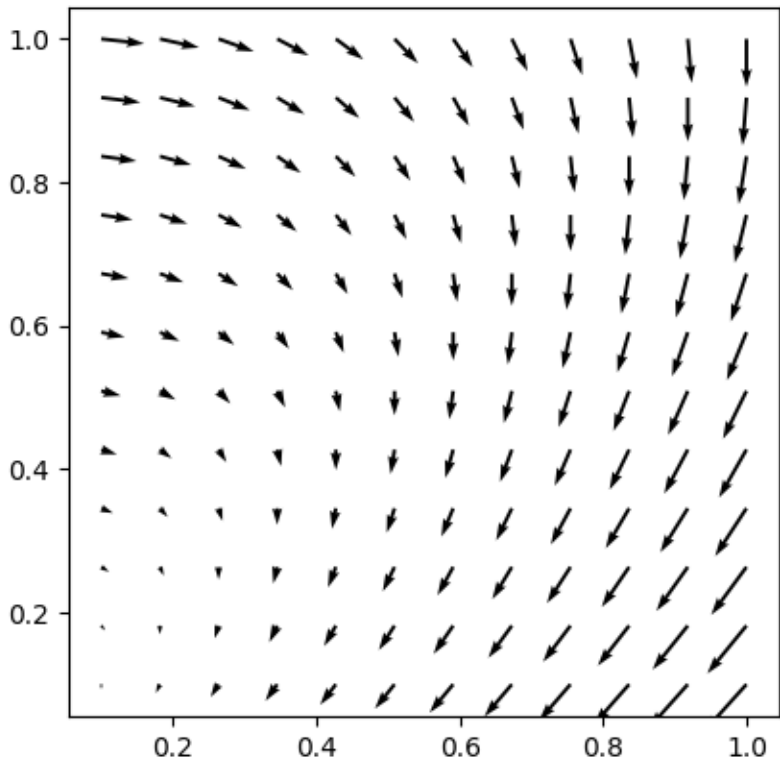
B



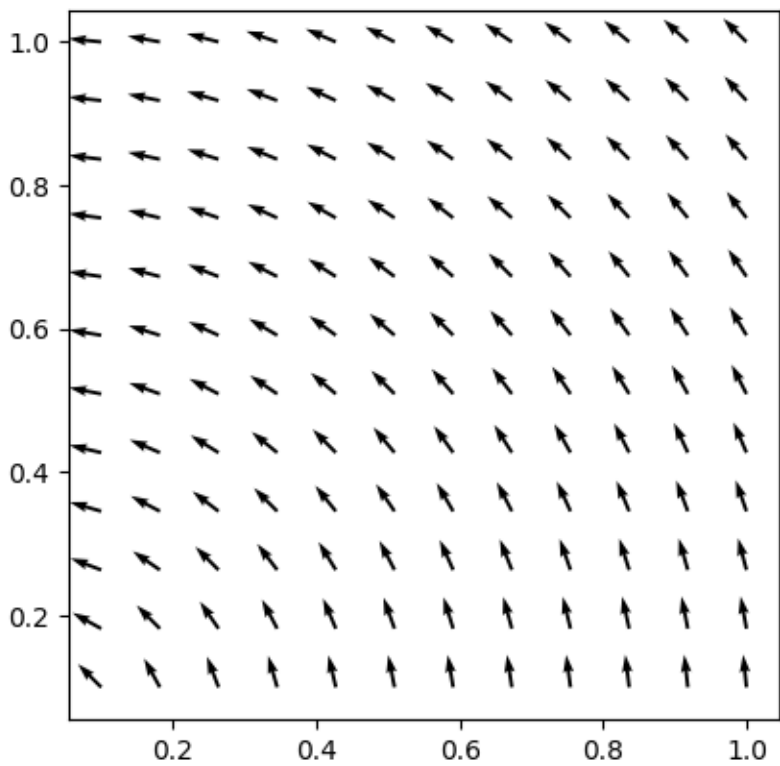
C



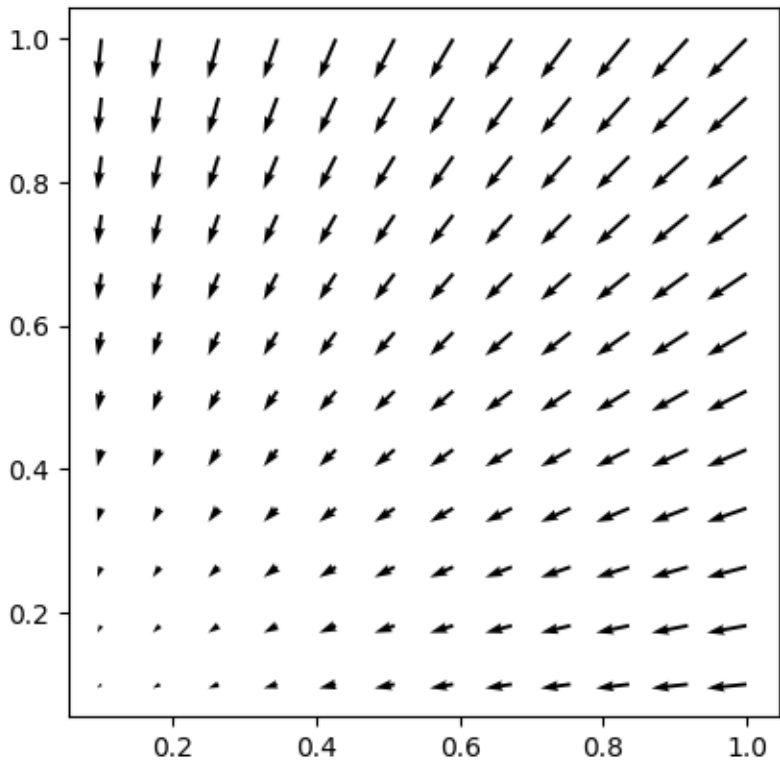
D



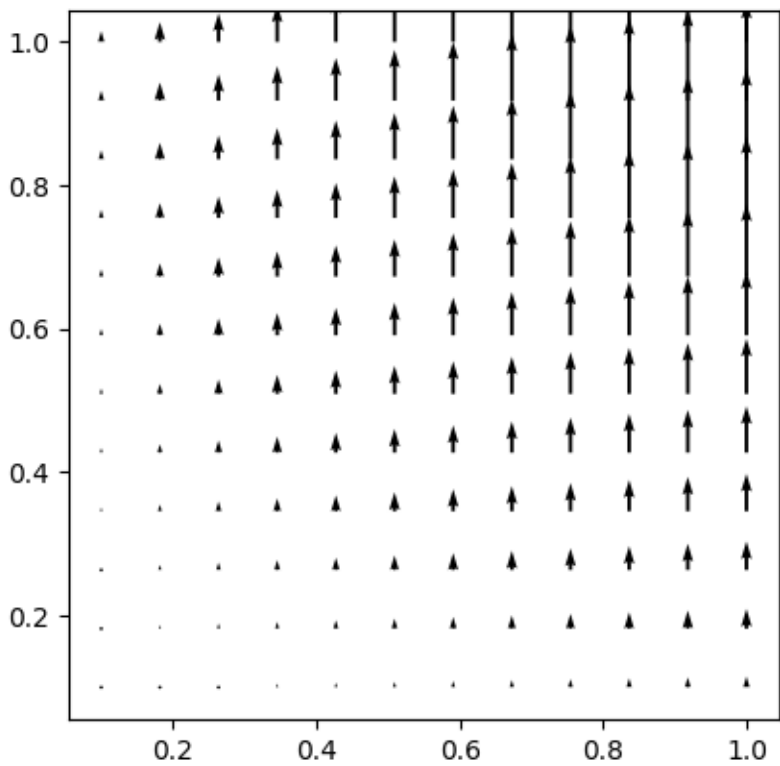
E



F



G



H

