

Exercise 3

Use Table A.7-2 to write down directly the following quantities in cylindrical coordinates:

- (a) $(\nabla \cdot \rho \mathbf{v})$, where ρ is a scalar (b) $[\nabla \cdot \rho \mathbf{v} \mathbf{v}]_r$, where ρ is a scalar
(c) $[\nabla \cdot p \boldsymbol{\delta}]_\theta$, where p is a scalar (d) $(\nabla \cdot [\boldsymbol{\tau} \cdot \mathbf{v}])$
(e) $[\mathbf{v} \cdot \nabla \mathbf{v}]_\theta$ (f) $\nabla \mathbf{v} + (\nabla \mathbf{v})^\dagger$