

If $\mathbf{A} = 3xz^2\mathbf{i} - yz\mathbf{j} + (x + 2z)\mathbf{k}$, find $\nabla \cdot \mathbf{A}$. [98 屏教大光電 2(2)]

$$[\text{解}] \nabla \cdot \mathbf{A} = \frac{\partial(3xz^2)}{\partial x} + \frac{\partial(-yz)}{\partial y} + \frac{\partial(x + 2z)}{\partial z} = 3z^2 - z + 2$$