IP[y]: Notebook simple_ga_test Save QuickHelp

In [1]:
```
from printer import  Format
from ga import Ga
from sympy import symbols
```

In [2]:
```
Format(ipy=True)
```

In [3]:
```
coords = (x,y,z) = symbols('x,y,z',real=True)
(o3d,ex,ey,ez) = Ga.build('e_x e_y e_z',g=[1,1,1],coords=coords)
```

In [4]:
```
v = o3d.mv('v','vector')
```

In [5]:
```
v.Fmt(3,'v')
```

$$v = v^{x}\boldsymbol{e_x} + v^{y}\boldsymbol{e_y} + v^{z}\boldsymbol{e_z}$$

In [6]:
```
V = o3d.mv('V','vector',f=True)
```

In [7]:
```
V.Fmt()
```

$$V^{x}\boldsymbol{e_x} + V^{y}\boldsymbol{e_y} + V^{z}\boldsymbol{e_z}$$

In [8]:
```
gradV = o3d.grad*V
```

In [9]:
```
gradV.Fmt(3,r'\nabla V')
```

$$\begin{aligned}\nabla V = &\left(\partial_{x}V^{x} + \partial_{y}V^{y} + \partial_{z}V^{z}\right)\\ &+\left(-\partial_{y}V^{x} + \partial_{x}V^{y}\right)\boldsymbol{e_x}\wedge\boldsymbol{e_y}\\ &+\left(-\partial_{z}V^{x} + \partial_{x}V^{z}\right)\boldsymbol{e_x}\wedge\boldsymbol{e_z}\\ &+\left(-\partial_{z}V^{y} + \partial_{y}V^{z}\right)\boldsymbol{e_y}\wedge\boldsymbol{e_z}\end{aligned}$$

In [10]:
```
gradV.Fmt(2,r'\nabla V')
```

$$\begin{aligned}\nabla V = &\left(\partial_{x}V^{x} + \partial_{y}V^{y} + \partial_{z}V^{z}\right)\\ &+\left(-\partial_{y}V^{x} + \partial_{x}V^{y}\right)\boldsymbol{e_x}\wedge\boldsymbol{e_y} + \left(-\partial_{z}V^{x} + \partial_{x}V^{z}\right)\boldsymbol{e_x}\wedge\boldsymbol{e_z} + \left(-\partial_{z}V^{y} + \partial_{y}V^{z}\right)\boldsymbol{e_y}\wedge\boldsymbol{e_z}\end{aligned}$$

In [ ]:
```

```