```
> restart : with(LinearAlgebra) : with(plots) : with(plottools) : with(inttrans) :
      with(VectorCalculus) : SetCoordinates('cartesian'[x, y, z]) :
> F := VectorField([0, −z, y]) :
> curl := Curl(F)
```

$$curl := (2)\bar{e}_x + (0)\bar{e}_y + (0)\bar{e}_z \tag{1}$$

```
> du := VectorField([diff(u·cos(u), u$1), diff(u·sin(u), u$1), 0]) :
> dv := VectorField([0, 0 , 1]) :
```

$$-2 - \frac{\pi}{2} \tag{2}$$

```
> cross := CrossProduct(du, dv)
```

$$cross := (\sin(u) + u\cos(u))\bar{e}_x + (-\cos(u) + u\sin(u))\bar{e}_y + (0)\bar{e}_z \tag{3}$$

```
>
> int(int(cross . curl, v = 0 ..u), u = 0 .. Pi/2)
```

$$-2 + \frac{\pi^2}{2} \tag{4}$$

```
>
```