

```

[> restart;
with(VectorCalculus) :
v := VectorField( < y, -x, 0 >, 'cartesian'[x, y, z] );

```

(1)

$$(y)\bar{e}_x - x\bar{e}_y$$

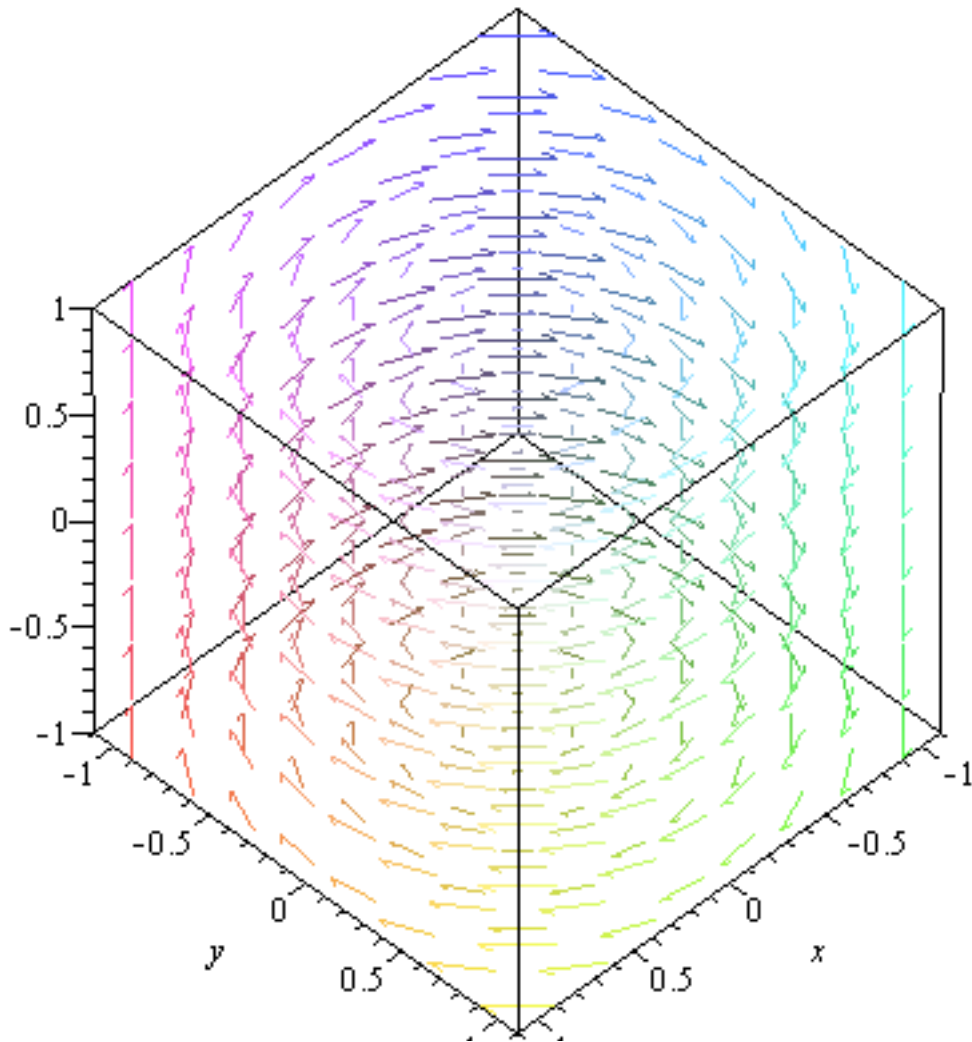
(2)

$$(y)\bar{e}_x - x\bar{e}_y$$

```

with(plots) :
fieldplot3d(v, -1..1, -1..1, -1..1, axes = boxed)

```



```
c := Curl(v)
```

$$-2\bar{e}_z$$

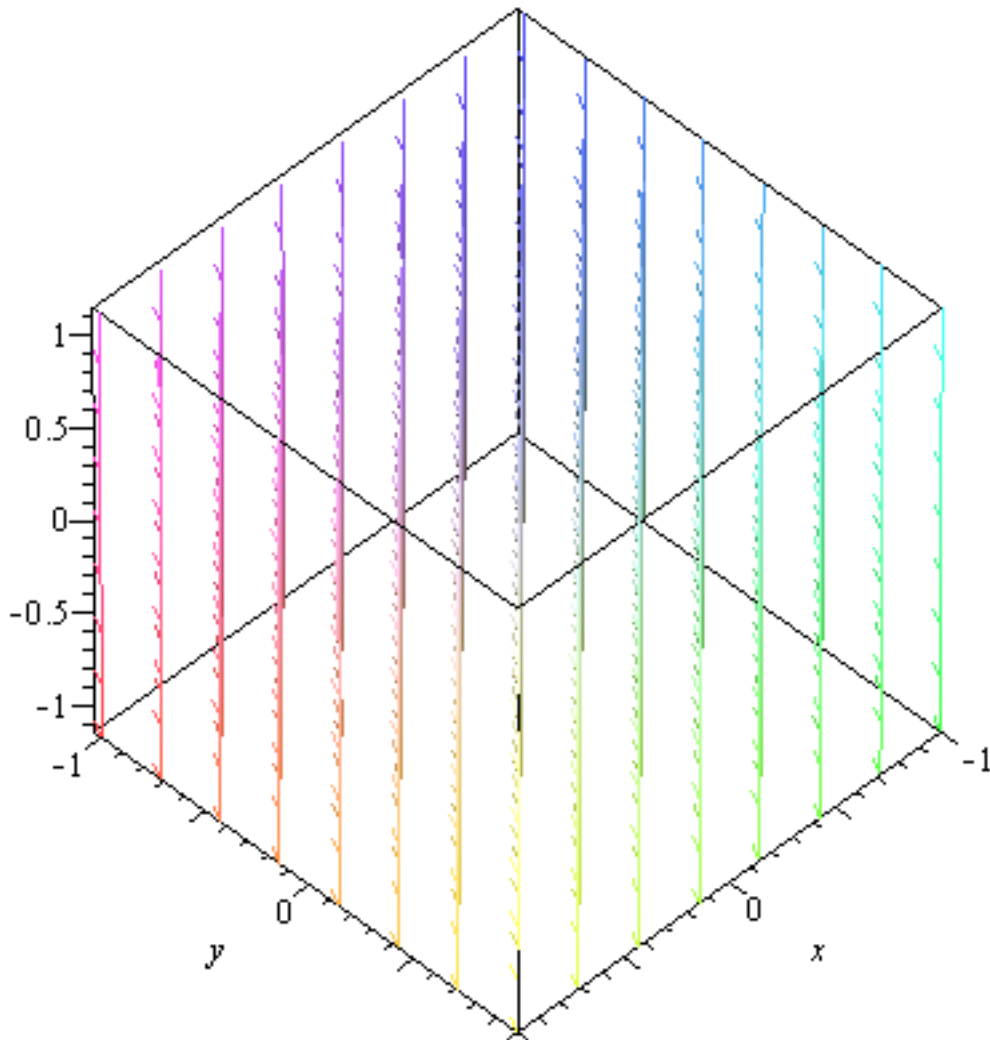
(3)

```
d := Divergence(v)
```

$$0$$

(4)

```
fieldplot3d(c, -1..1, -1..1, -1..1, axes = boxed)
```



```
> restart;
> with(VectorCalculus) : with(plots) :
```

Define your vector field:

```
> v := VectorField( <x^2, 3*x*y^2, -2*x*z>, 'cartesian'[x, y, z] );
v := (x^2)e_x + 3xy^2e_y - 2xz e_z (5)
```

Look at the HELP entry for the next command. Play around with the arrows and grid options (and any others that look interesting). You can re-size and rotate this plot by using the mouse.

```
> fieldplot3d(v, -1 ..1, -1 ..1, -1 ..1, axes = boxed, arrows = `3-D`, grid = [6, 6, 6]);
```

