

Assignment 6

Question

If $F = x \sin(y) \hat{i} + y \cos(z) \hat{j} + z \tan(x) \hat{k}$, then find $\text{div}(F)$ and $\text{curl}(F)$

Code

```
1  syms x y z;
2  F = [x*sin(y), y*cos(z), z*(x)];
3  disp('Vector Function F = ');
4  disp(F);
5  div_F = divergence(F,[x,y,z]);
6  disp('div(F) at (x,y,z) = ');
7  disp(div_F);
8  curl_F = curl(F,[x,y,z]);
9  disp('curl(F) at (x,y,z) = ')
10 disp(curl_F);
```

Output

```
>> Assignment_6
Vector Function F =
[x*sin(y), y*cos(z), z*tan(x)]

div(F) at (x,y,z) =
cos(z) + tan(x) + sin(y)

curl(F) at (x,y,z) =
      y*sin(z)
-z*(tan(x)^2 + 1)
      -x*cos(y)

>>
```