

SOLUTION TP2_SUITE

Exercice 1 :

```
function afficheur3D(min,max,pas,n)
switch n
    case 1
        [X,Y,Z]=f1(min,max,pas);
        mesh(X,Y,Z);
    case 2
        [X,Y,Z]=f2(min,max,pas);
        mesh(X,Y,Z);
    case 3
        [X,Y,Z]=f3(min,max,pas);
        mesh(X,Y,Z);
    case 4
        [X,Y,Z]=f4(min,max,pas);
        mesh(X,Y,Z);
    case 5
        [X,Y,Z]=f5(min,max,pas);
        mesh(X,Y,Z);
    otherwise
        disp('Erreur de choix de Fonction');
end

end

function [X,Y,Z]=f1(min,max,pas)
if min<max
[X,Y] = meshgrid(min:pas:max);
Z = X.^2 + Y.^2;
end
end

function [X,Y,Z]=f2(min,max,pas)
if min<max
[X,Y] = meshgrid(min:pas:max);
Z = sqrt(X + Y);
end
end

function [X,Y,Z]=f3(min,max,pas)
if min<max
[X,Y] = meshgrid(min:pas:max);
Z = exp(X./Y);
end
end

function [X,Y,Z]=f4(min,max,pas)
if min<max
[X,Y] = meshgrid(min:pas:max);
s=size(X);
```

```
Z=zeros(s(1),s(2));  
for i=1:10  
    Z = Z+((X+Y)/i);  
end  
end  
end  
  
function [X,Y,Z]=f5(min,max,pas)  
if min<max  
    [X,Y] = meshgrid(min:pas:max);  
    Z = tan(X+Y);  
end  
end
```

Exercice 2 :

```
function affiche3d(A)  
    s=size(A);  
    [X,Y]=meshgrid(1:s(2),1:s(1));  
    Z=zeros(s(1),s(2));  
    if (std2(A) <= 100 )  
  
        Z=Z+double(A);  
        mesh(X,Y,Z);  
    else  
  
        Z=Z+log(double(A));  
        mesh(X,Y,Z);  
    end  
end
```

```
>> A=rand(5,5,'double')  
  
>> A=A*100 % ecart type = 285.0300  
  
>> affiche3d(A)  
  
>> A=A/10 % ecart type = 28.5030  
  
>> affiche3d(A)
```