Viditelnost

```matlab
clear all
% vrcholy polygonu
vert = [ 0, 0, 0;   % p1
1, 0, 0;
1, 6, 1;
0, 6, 1;
0, 0, 1; % p2
0, 1, 1;
6, 1, 0;
6, 0, 0;
5, 0, 1;   % p3
6, 0, 1;
6, 6, 0;
5, 6, 0;
6, 5, 1;   % p4
6, 6, 1;
0, 6, 0;
0, 5, 0 ];

% polygony
surf1 = [ 1 2 3 4;
5 6 7 8;
9 10 11 12;
13 14 15 16 ];
f = figure;

set(f,'renderermode','man');
set(f,'renderer','painters');
%set(f,'renderer','opengl');
patch('Faces',surf1,...
'Vertices',vert,...
'FaceColor','red',...
'EdgeColor','black');
axis equal;
grid off;
view(-45,45);
```
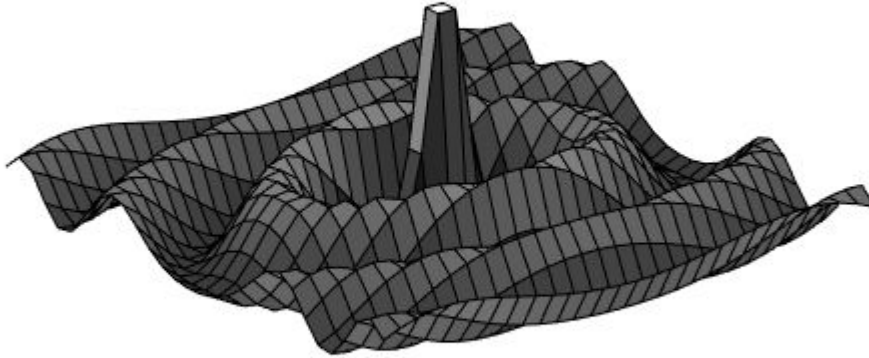
```matlab
ax = gca
info = rendererinfo(ax)
```

```matlab
f =@(u,v)(cos((u.^2 + 3*v.^2).^(1/2)))./(u.^2+v.^2).^(1/3);

u = linspace(-10,10,30);
v = linspace(-10,10,30);

[U,V] = meshgrid(u,v);
```
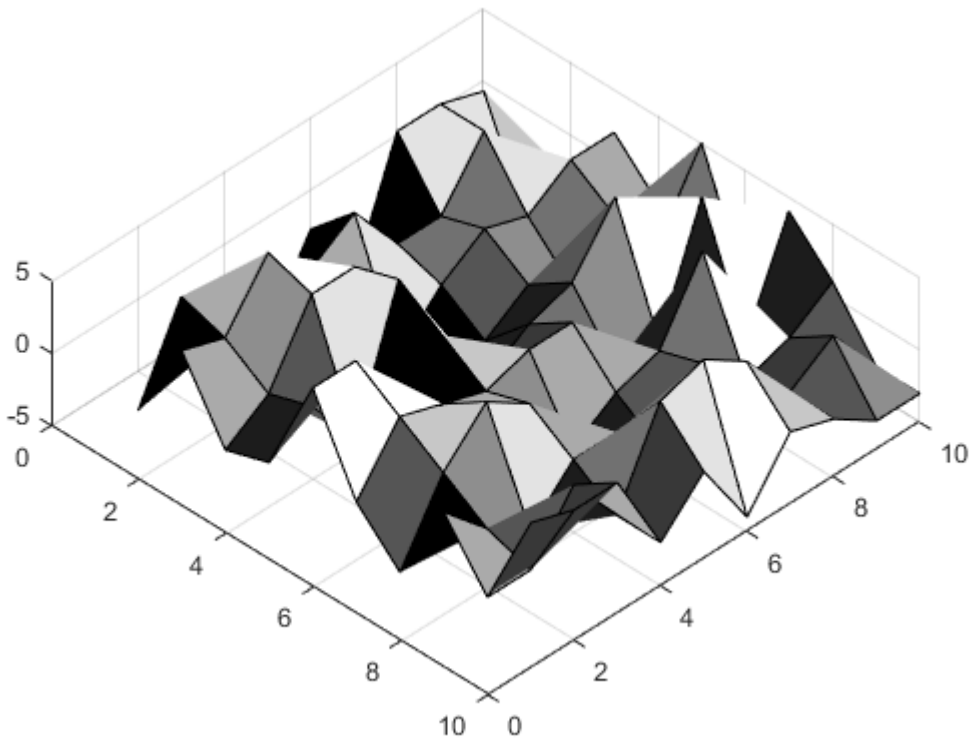
```
Z = f(U,V);

figure,
surf(U,V,Z);
axis off;
colormap gray;
```

```
u = 1 : 10;
v = 1 : 10;
[U,V] = meshgrid(u,v);
Z = randi(10,[10,10]) - 5;

figure,
surf(U,V,Z);
colormap gray;
```

```
plocha = [ 0  0  1  1  2  2  1  1  0  0;
           0  0  0  0  1  1  1  1  2  2;
           2  2  2  2  1  1  1  1  0  0;
          -1 -1 -1  0  0  0  0  1  1  1]
```

```
plocha = 4×10
     0     0     1     1     2     2     1     1     0     0
     0     0     0     0     1     1     1     1     2     2
     2     2     2     2     1     1     1     1     0     0
    -1    -1    -1     0     0     0     0     1     1     1
```

```
barva = zeros([size(plocha,1), size(plocha,2),3]);
barva(1,:, 1) = 1;
barva(2,:, 2) = 1;
barva(3,:, 3) = 1;
barva(4,:, 1 : 2) = 1;

figure,
surf(plocha, "EdgeColor","flat", "FaceColor", [0.9 0.9 0.9], "CData",barva, "LineWidth",3);

view([0 0]);
colormap gray;
```