%KONTROL WORK

clear

clc

%Task 4

disp('---Task 4 ---')

clear

figure(4)

title('Task 4')

n = [ -4 1 2];

A = 5;

B = -6;

C = 2;

D = -10;

x = -5:0.5:5;

y = -5:0.5:5;

[X,Y] = meshgrid(x,y);

Z = (-A\*X-B\*Y-D)/C;

hold on

plot3(X,Y,Z,'r','MarkerSize',8, 'LineWidth',2)

grid on

xlabel('x'), ylabel('y'), zlabel('z')

title('5x - 6y + 2z -10 = 0')

surf(X,Y,Z)

view(-60,30)

line([1 0],[-5 -2],[0 1],'color','b','LineWidth',2)

text((34/11),(-3/11),(-39/11), 'M(34/11, -3/11, -39/11)')

%Task 3

disp('---Task 3---')

clear

n = 3

A=[-1 2 1 1; -1 2 1 -1;-2 4 2 4]

b=[2 ;-3 ;9]

D = [A b]

disp('Stupenchatyy vid matritsy A:')

AA= rref(D)

x = AA(1:n,end);

disp('Resheniye sistemy')

x

%Task 1

clear

disp('---Task 1---')

A=[1 -2 3;

2 3 -1;

0 -2 1]

B=[ 7;

0;

7]

%vrode formula vernaya , ne mogu ponyat' pochemu matlab ne reshayet

X=B.\*A.^(-1)

%proverka

X.\*A

B

%Task 2

disp('---Task 2---')

%Ellipticheskiy paraboloid

[X,Y,Z] = meshgrid(-10:0.5:10,-10:0.5:10,-10:0.5:10);

a=2;c=2;b=-1;

V = X.^2/a^2 - Y + Z.^2/c^2;

p=patch(isosurface(X,Y,Z,V,0));

set(p,'FaceColor','red','EdgeColor','none');

view(3);

axis equal

grid on

camlight