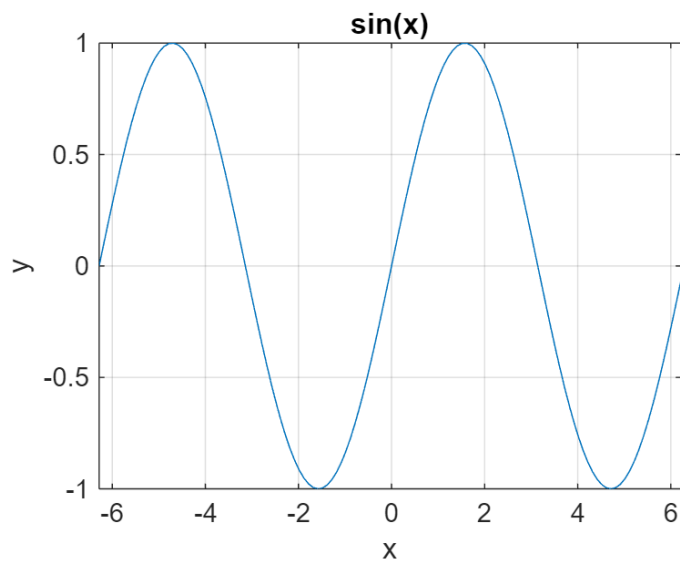


## Practice Questions

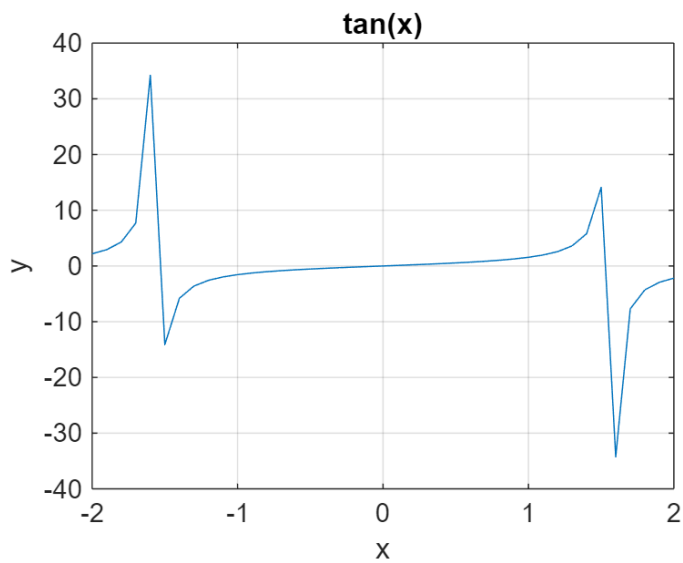
1.

```
x = -2*pi:0.1:2*pi;  
y = sin(x);  
plot(x,y)  
xlabel x  
ylabel y  
grid on  
title sin(x)
```



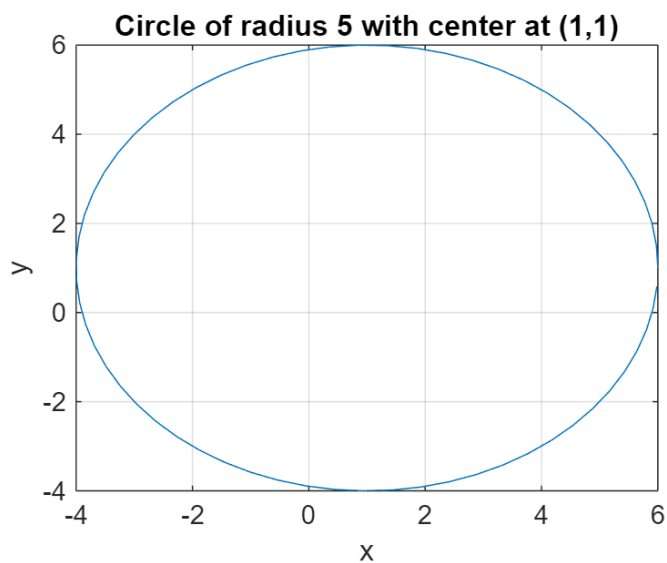
2.

```
x = -2:0.1:2;  
y = tan(x);  
plot(x,y)  
xlabel x  
ylabel y  
grid on  
title tan(x)
```



3.

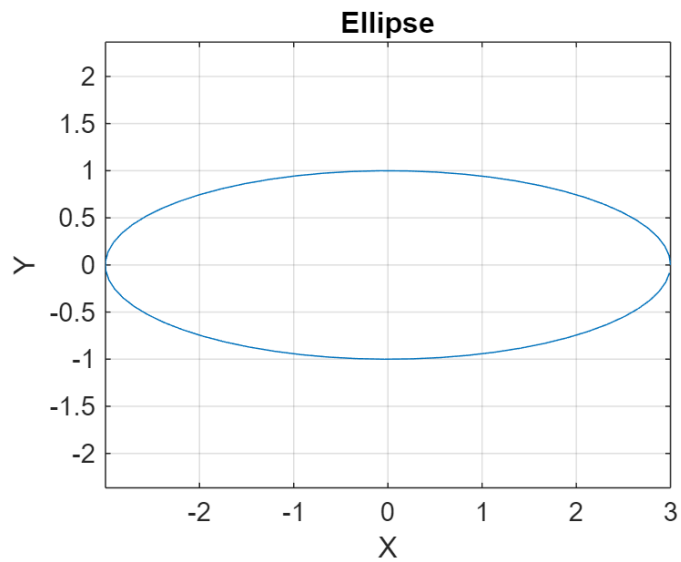
```
r = 5;
theta = 0:0.1:2*pi;
plot(r*cos(theta)+1,r*sin(theta)+1)
xlabel x
ylabel y
grid on
title("Circle of radius 5 with center at (1,1)")
```



4.

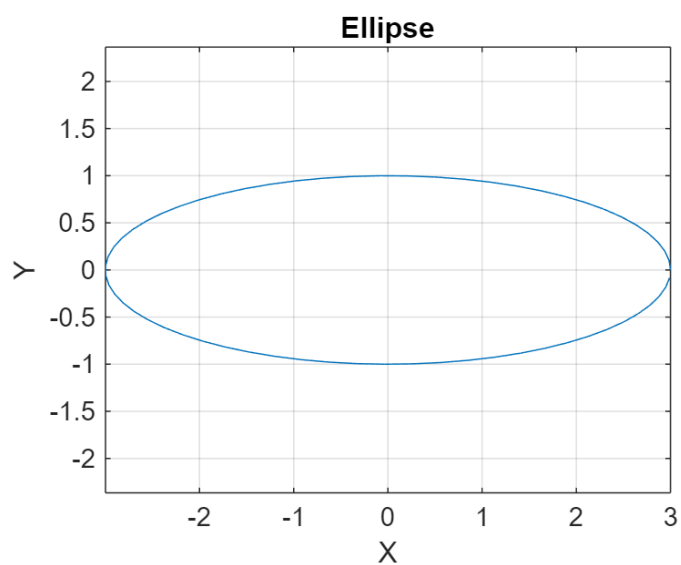
```
a = 3;
b = 1;
theta = 0:0.1:2*pi;
plot(a*cos(theta),b*sin(theta))
```

```
axis equal
xlabel X
ylabel Y
grid on
title("Ellipse")
```



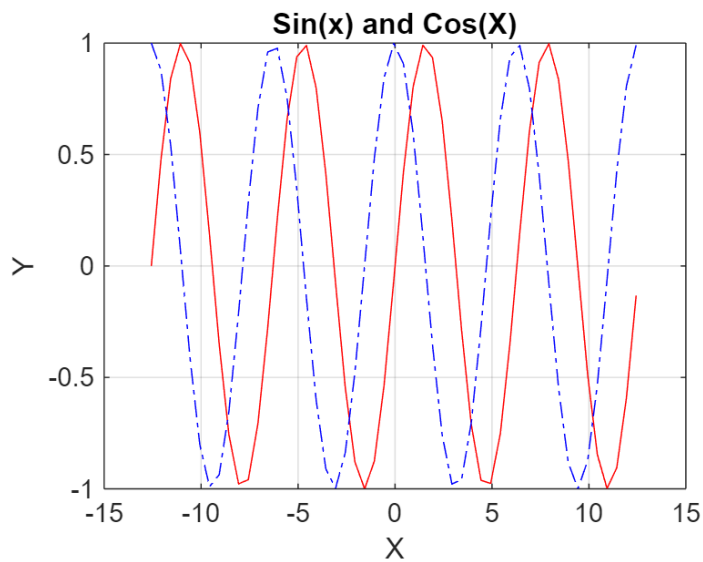
5.

```
a = 3;
b = 1;
theta = 0:0.1:2*pi;
plot(a*cos(theta),b*sin(theta))
axis equal
xlabel X
ylabel Y
grid on
title("Ellipse")
```



6.

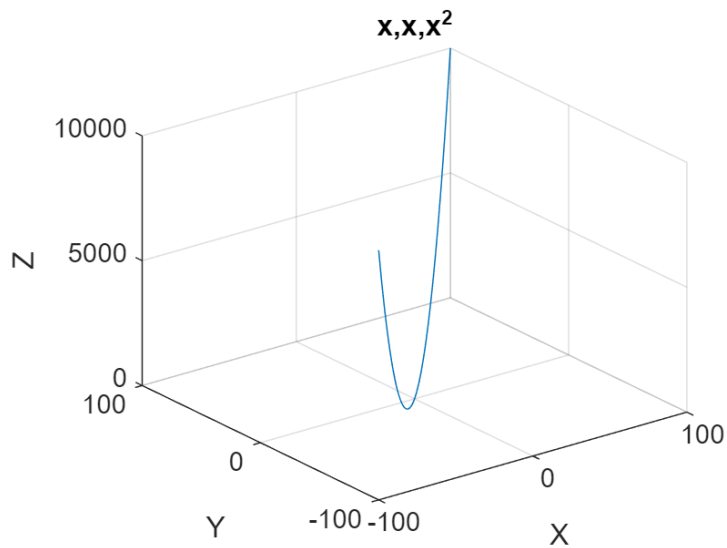
```
x = -4*pi:0.5:4*pi;  
y1 = sin(x);  
y2 = cos(x);  
plot(x,y1,Color="red")  
hold on  
plot(x,y2,Color="blue",LineStyle="-.")  
xlabel X  
ylabel Y  
grid on  
title("Sin(x) and Cos(X)")  
hold off
```



```
clc
```

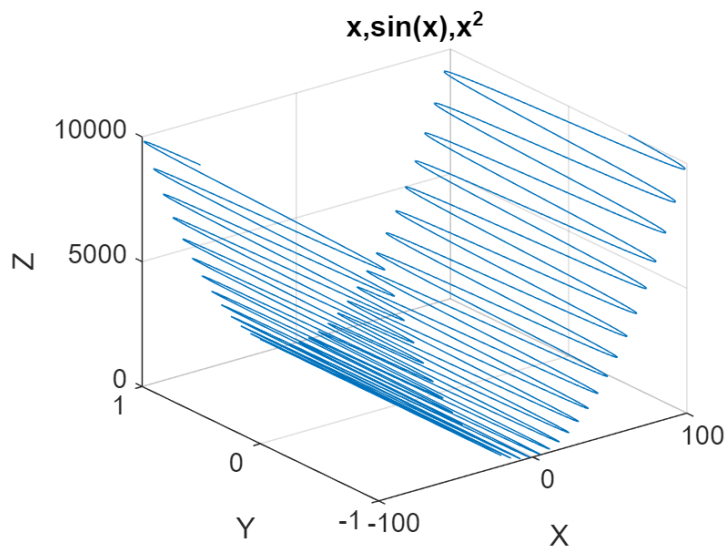
7.

```
x = -100:0.1:100;  
y = x;  
z = x.^2;  
plot3(x,y,z)  
xlabel X  
ylabel Y  
zlabel Z  
grid on  
title("x,x,x^2")
```



8.

```
x = -100:0.1:100;
y = sin(x);
z = x.^2;
plot3(x,y,z)
xlabel X
ylabel Y
zlabel Z
grid on
title("x,sin(x),x^2")
```



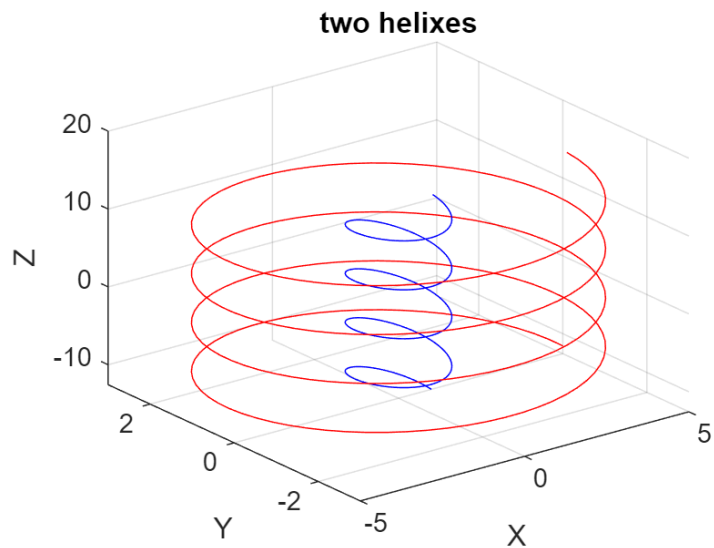
9.

```
t = -4*pi:0.1:4*pi;
plot3(5*cos(t),3.*sin(t),t+1,Color="red")
```

```

hold on
plot3(cos(t),sin(t),t,Color="blue")
hold off
xlabel X
ylabel Y
zlabel Z
grid on
title("two helixes")

```

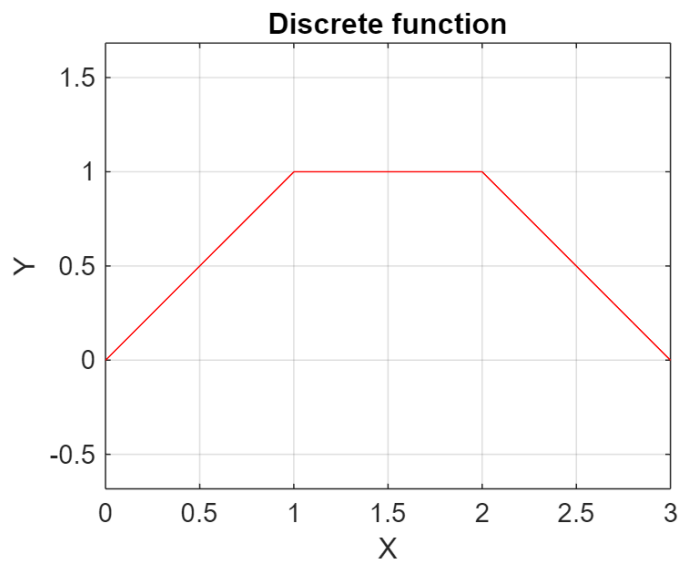


## 10.

```

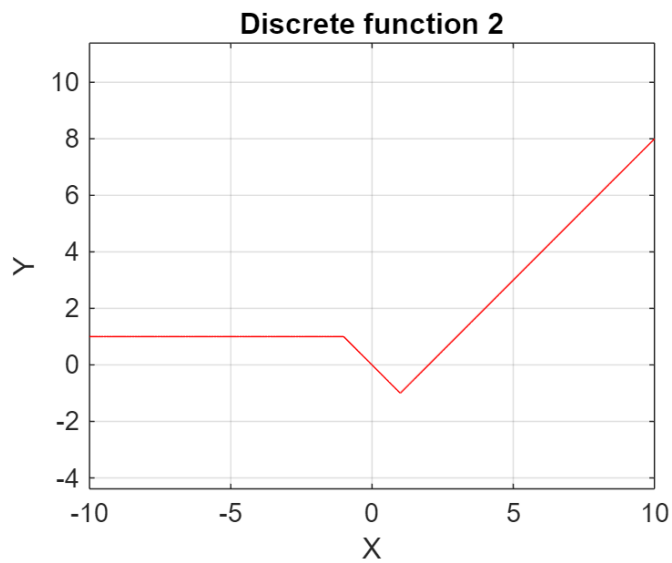
x = 0:0.1:1;
plot(x,x,color="red")
hold on
plot([1 2],[1 1],color="red")
xlim([1 2])
hold on
x = 2:0.1:3;
plot(x,3-x,color="red")
grid on
axis equal
hold off
xlabel X
ylabel Y
grid on
title("Discrete function")

```



11.

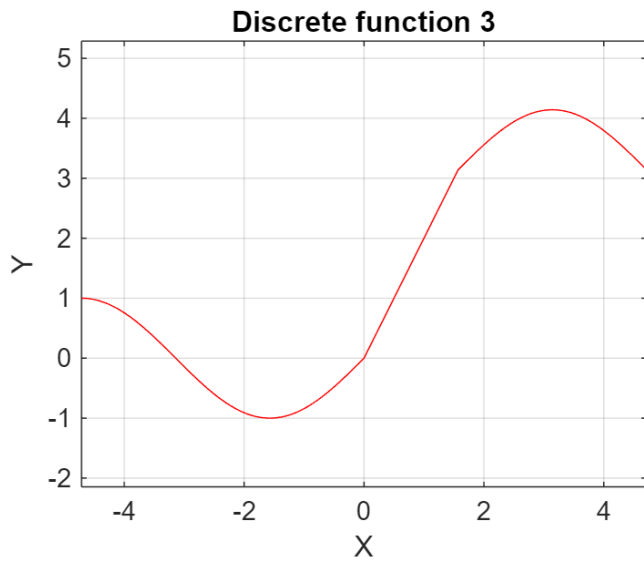
```
x = -10:0.1:-1;
plot(x,ones(size(x)),color="red")
hold on
x = -1:0.1:1;
plot(x,-x,color="red")
hold on
x = 1:0.1:10;
plot(x,x-2,color="red")
hold off
grid on
axis equal
hold off
xlabel X
ylabel Y
grid on
title("Discrete function 2")
```



12.

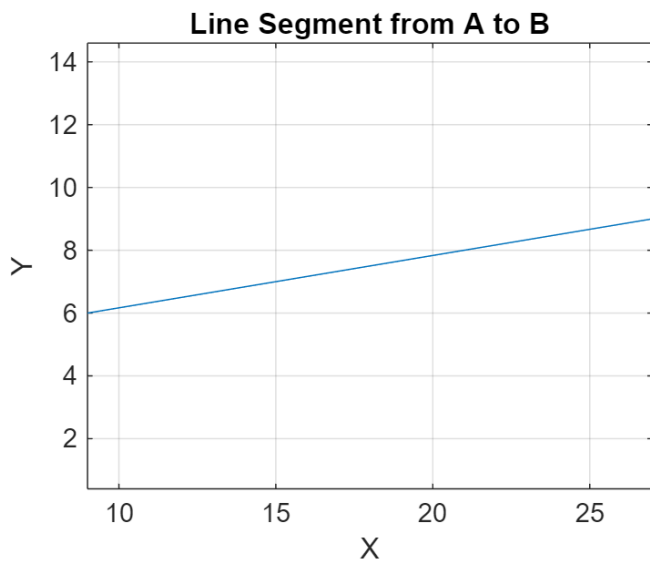
```
x = linspace(-(3.*pi/2),0);
plot(x,sin(x),color="red")
hold on
x = linspace(0,(pi/2));
plot(x,2.*x,color="red")
hold on
x = linspace((pi/2),(3.*pi/2));
plot(x,pi-cos(x),color="red")
hold off
grid on
axis equal
hold off
xlabel X
ylabel Y
grid on
title("Discrete function 3")
```





**13.**

```
A = [27,09];
B = [09,06];
plot(A,B)
axis equal
xlabel X
ylabel Y
grid on
title("Line Segment from A to B")
```



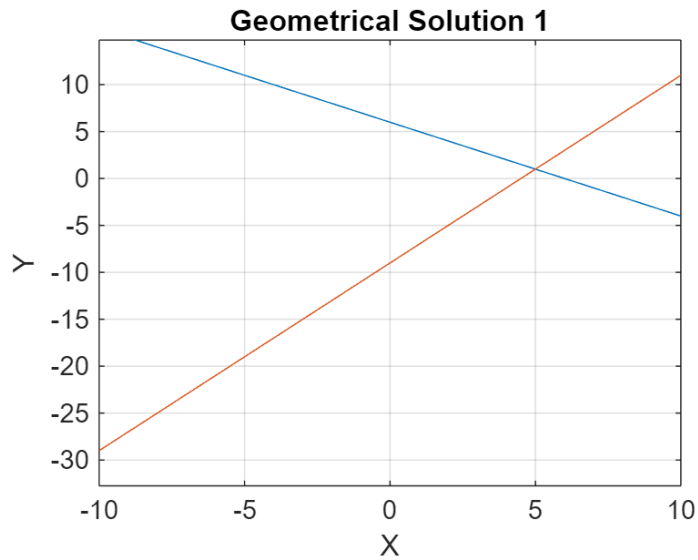
**14.**

```
ezplot('6-x',[-10 10])
hold on
ezplot('(2.*x)-9',[-10 10])
```

```

hold off
xlabel X
ylabel Y
grid on
title("Geometrical Solution 1")

```

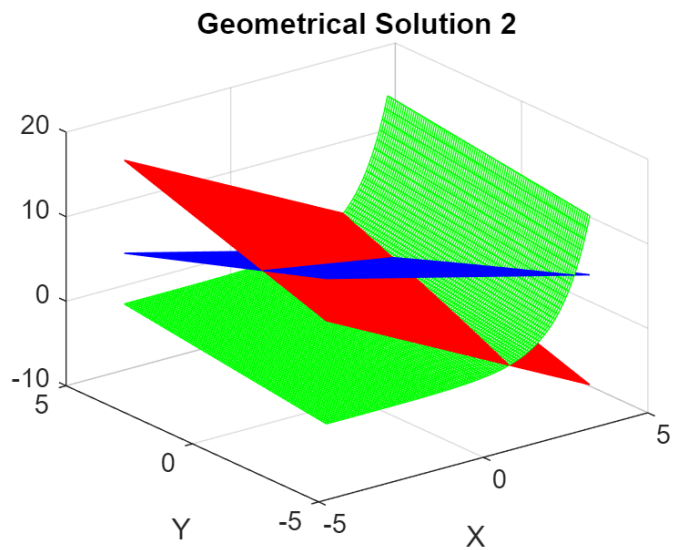


**15.**

```

[X,Y] = meshgrid(linspace(-4,4));
mesh(X,Y,6-X-Y,EdgeColor="blue")
hold on
mesh(X,Y,5-(2.*X)+Y,EdgeColor="red")
hold on
mesh(X,Y,((3.^X)+(2.*Y)-8)/5,EdgeColor="green")
hold off
xlabel X
ylabel Y
grid on
title("Geometrical Solution 2")

```

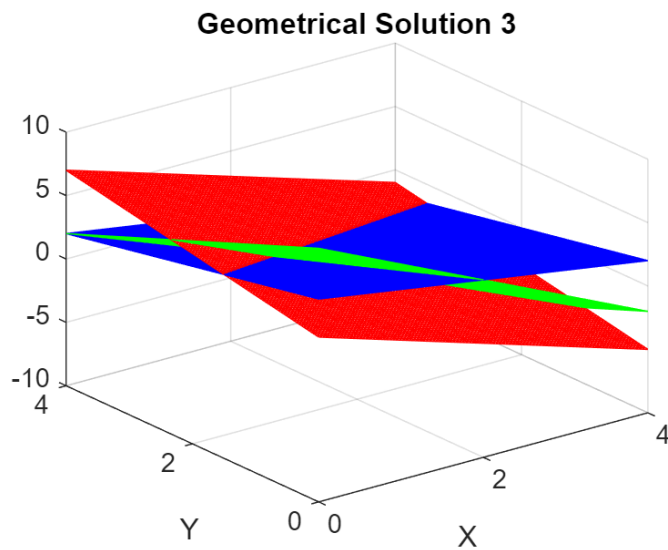


```
A = [[1 1 1];[2 -1 1];[3 2 -5]];
B = [6;5;8];
C = A\B
```

```
C = 3x1
    3.0000
    2.0000
    1.0000
```

## 16.

```
[X,Y] = meshgrid(linspace(0,4));
mesh(X,Y,6-X-Y,EdgeColor="blue")
hold on
mesh(X,Y,3-(2.*X)+Y,EdgeColor="red")
hold on
mesh(X,Y,(10-(3.*X)-(2.*Y)),EdgeColor="green")
hold off
xlabel X
ylabel Y
grid on
title("Geometrical Solution 3")
```

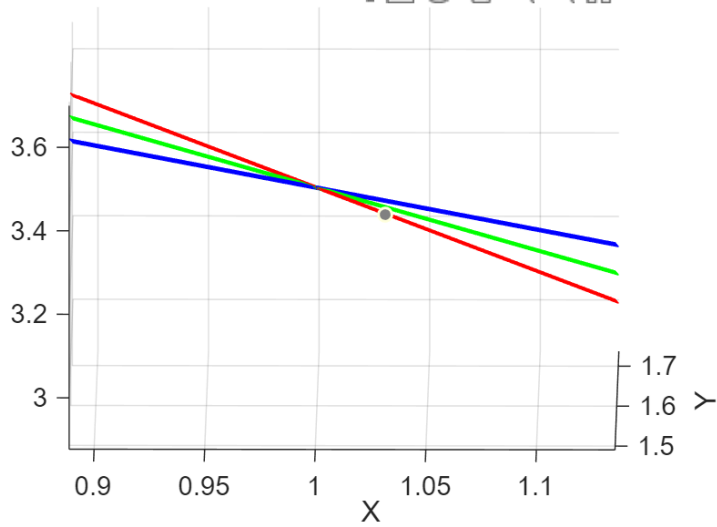


```
A = [[1 1 1];[2 -1 1];[3 2 1]];
B = [6; 3; 10];
pinv(A)*B
```

```
ans = 3x1
    1.0000
    2.0000
    3.0000
```

## 17.

```
[X,Y] = meshgrid(linspace(0,3));
mesh(X,Y,6-X-Y,EdgeColor="blue")
hold on
mesh(X,Y,7-(2.*X)-Y,EdgeColor="red")
hold on
mesh(X,Y,(13-(3.*X)-(2.*Y))/2,EdgeColor="green")
hold off
xlabel X
ylabel Y
grid on
title("Geometrical Solution 4")
```



```
A = [[1 1 1];[2 1 1];[3 2 2]];
B = [6;7;13];
C = pinv(A)*B
```

```
C = 3x1
    1.0000
    2.5000
    2.5000
```