

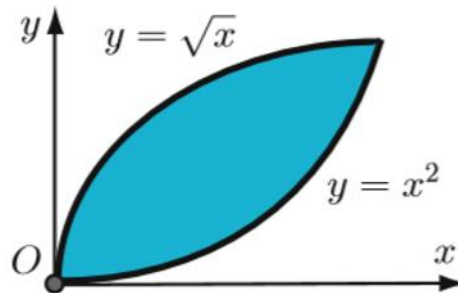
17.05.2020

Çağın AĞIRDEMİR

BCA 603 Hafta 10 Ödev

SORU:

**Homework 2 :** Find the x-coordinate of the centroid of the shaded region shown in the figure. The region is bounded by the curves  $y = x^2$  and  $y = \sqrt{x}$ . All coordinates may be treated as dimensionless.



CEVAP

```
clc,clear  
syms y x
```

Denklem tanımlamaları ve denklemlerin çizimi

```
x1=0:0.01:1;  
y1=x1.^(1/2);  
y2=x1.^2;  
plot(x1,y1);  
hold on  
plot(x1,y2);
```

Hesaplamalar

$$m = \int_0^1 \sqrt{x} - x^2 dx$$

```
m=int((x^(1/2)-x^2),x,0,1);  
disp(m);
```

$$mx = \frac{1}{2} \int_0^1 \sqrt{x} - x^2 dx$$

```
mx=int(( (x^(1/2)) ^2-(x^2)^2),x,0,1)*0.5;
disp(mx);
```

$$my = \int_0^1 x(\sqrt{x} - x^2) dx$$

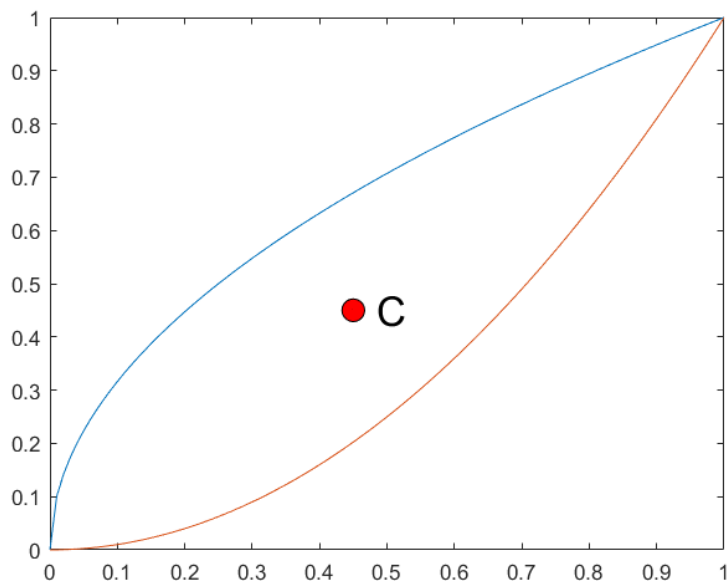
```
my=int(x*((x^(1/2))-(x^2)),x,0,1);
disp(my);
```

```
xC=my/m; %9/20
yC=mx/m; %9/20
```

Ekrana çizdirme komutları

```
plot(xC,yC,'o','MarkerSize',11,'MarkerEdgeColor','k','Marke
rFaceColor','r');
text(xC,yC,' C','FontSize',20);
```

Ekran Çıktısı



Ek: hafta10\_2.m