

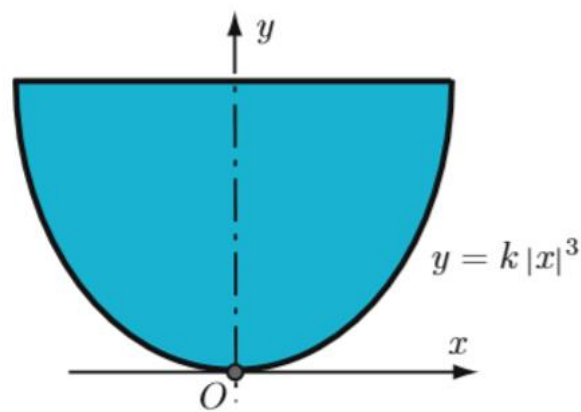
17.05.2020

Çağın AĞIRDEMİR

BCA 603 Hafta 10 Ödev

SORU:

**Homework 3** : Region shown is bounded by the curves  $y=b$  and  $y=k/|x|^3$ , where  $b=ka^3$ . Find the coordinates of the centroid.



CEVAP

```
clc,clear
```

Değişken tanımlamaları

```
syms y x
k=1;
b=10;
a=4;
x1=-a:0.1:a;
y1=b;
y2=k*abs(x1).^3;
x3 = [-3 3];
y3 = [10 10];
```

Şeklinde ekrana çizimi

```
line(x3,y3)  
hold on  
plot(x1,y2);
```

Hesaplamalar

$$m = 2 \int_0^a (b - kx^3) dx$$

```
m=2*int((b-k*x.^3),x,0,a);  
disp(m);
```

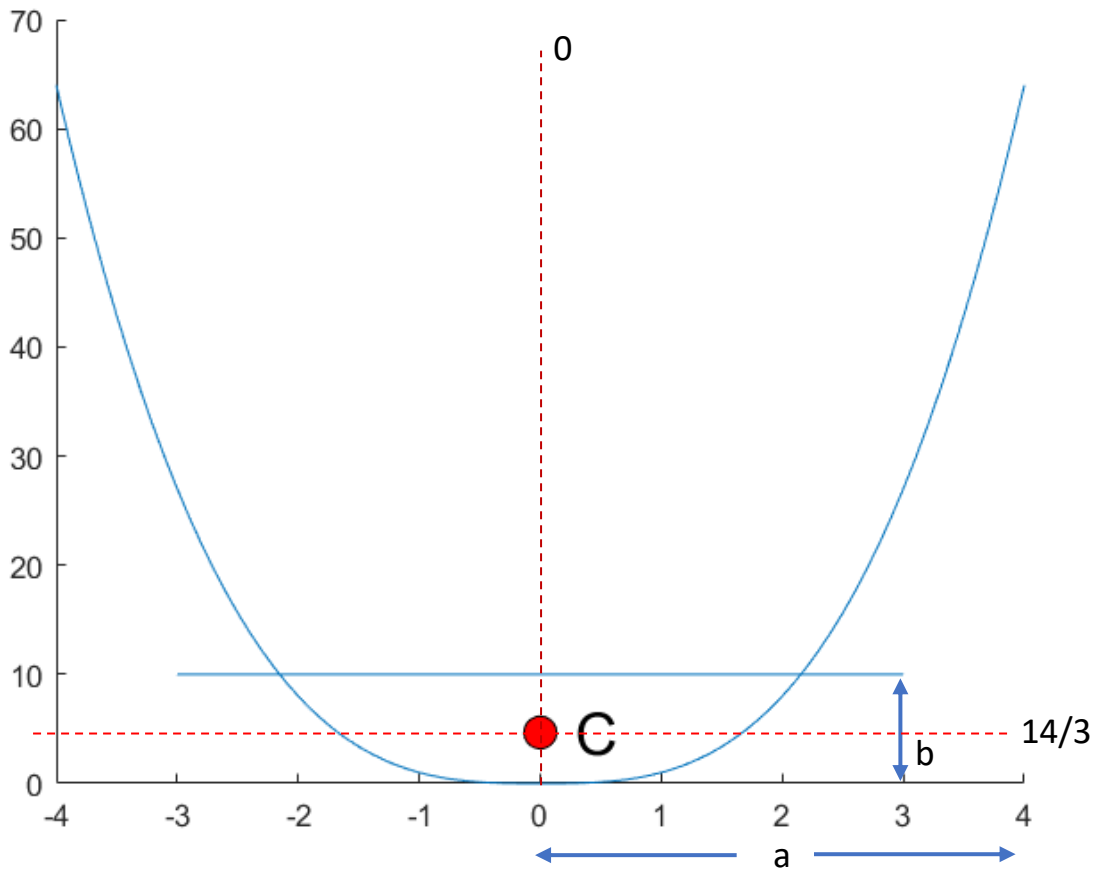
$$yC = \frac{2 \int_0^a (\frac{a+b}{3})(b - kx^3) dx}{m}$$

```
mx=2*int(((a+b)/3)*(b-k*x.^3),x,0,a);  
disp(mx);  
yC=mx/m;
```

Ekrana yazdırma komutları

```
plot(0,yC,'o','MarkerSize',11,'MarkerEdgeColor','k','Marker  
FaceColor','r');  
text(0,yC,' C','FontSize',20);
```

Ekran Çıktısı



Ek: hafta10\_3.m