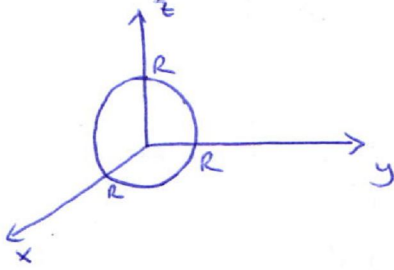


TEMEL YÜZEYLER

③

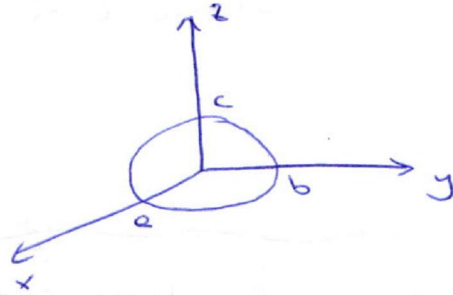
Küre: $x^2 + y^2 + z^2 = R^2 \Rightarrow$ Yarıçapı R olan, orjin merkezli küre



$(x-a)^2 + (y-b)^2 + (z-c)^2 = R^2 \Rightarrow$ Merkezi $M(a,b,c)$ noktası olan R yarıçaplı küre

Elipsoid:

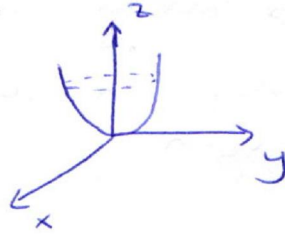
$$\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1 \rightarrow \text{Orjin merkezli elipsoid}$$



Paraboloid:

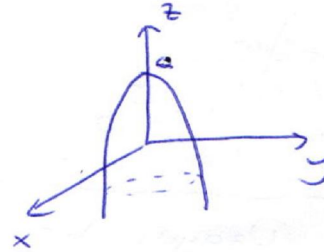
① $z = ax^2 + by^2$ ($a, b > 0$)
 \Downarrow
Orjin tepe noktalı,
kolları yukarı paraboloid

} \Rightarrow

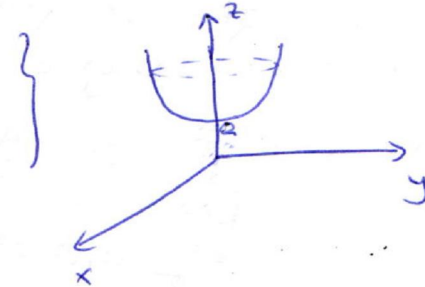


② $z = a - x^2 - y^2 \Rightarrow (0,0,a)$ tepe noktalı, kolları aşağı paraboloid

} \Rightarrow



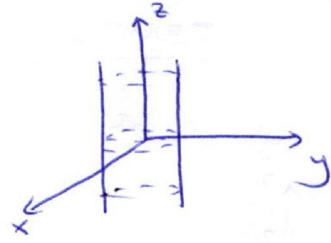
③ $z = a + x^2 + y^2 \Rightarrow (0,0,a)$ tepe noktalı, kolları yukarı



Silindir:

$$x^2 + y^2 = r^2 \Rightarrow z \text{ boyunca uzanan silindir}$$

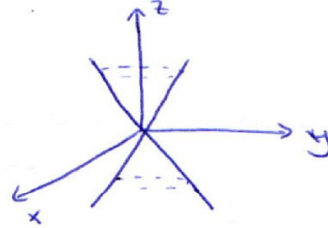
=)



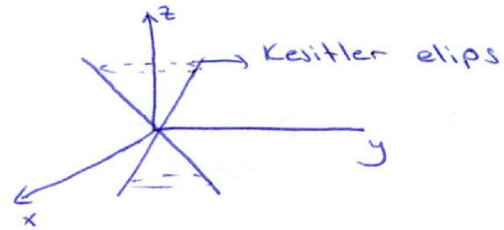
(4)

Koni:

$$* x^2 + y^2 = z^2 \Rightarrow \text{Dairesel Koni} \Rightarrow$$

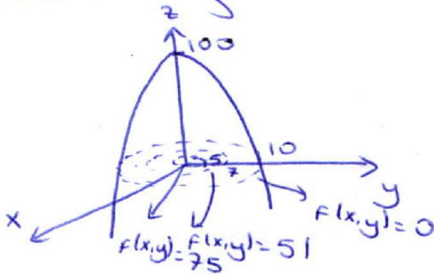


$$* \frac{x^2}{a^2} + \frac{y^2}{b^2} = z^2 \Rightarrow \text{Eliptik Koni} \Rightarrow$$



Seviye Eğrisi: Bir $f(x,y)$ fonksiyonunun bir $f(x,y)=c$ sabit değerine sahip olduğu noktaların kümesi f 'in seviye eğrisidir.

(*) $f(x,y)=100-x^2-y^2$ nin şeklini çizip $f(x,y)=0, 75, 51$ seviye eğrilerini gösterin.



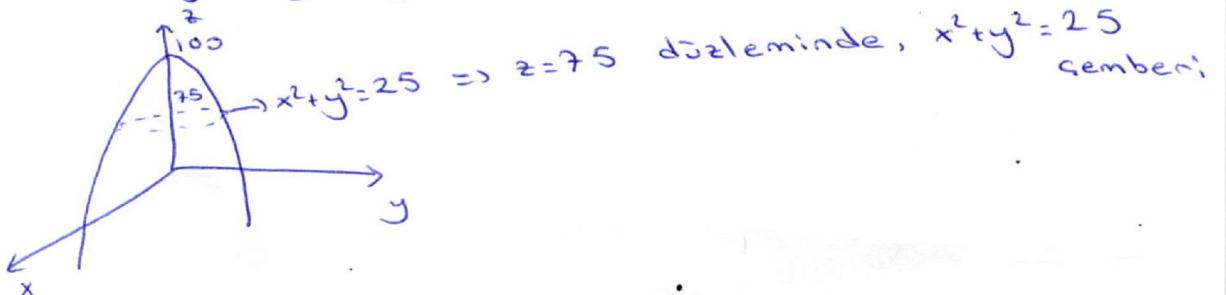
$$f(x,y)=0 \Rightarrow x^2 + y^2 = 100 \text{ çemberi}$$

$$f(x,y)=51 \Rightarrow x^2 + y^2 = 49 \text{ "}$$

$$f(x,y)=75 \Rightarrow x^2 + y^2 = 25 \text{ "}$$

Kontür Eğrisi: Uzayda bir $z=c$ düzleminin bir $z=f(x,y)$ yüzeyini kestiği eğri $f(x,y)=c$ değerini temsil eden noktalar-dan oluşur. Buna $f(x,y)=c$ kontür eğrisi denir.

(*) $f(x,y)=100-x^2-y^2$ yüzeyinin $f(x,y)=75$ kontür eğrisi?



*) $w = \sqrt{1-x^2-y^2-z^2}$ Tanım bölgesi?

$$1-x^2-y^2-z^2 \geq 0 \Rightarrow x^2+y^2+z^2 \leq 1 \Rightarrow$$

