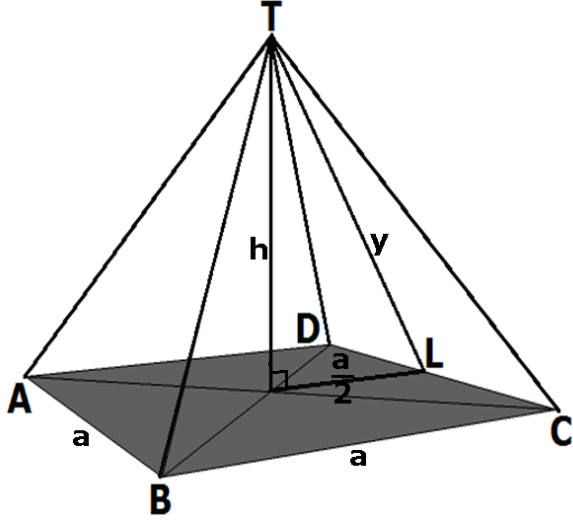


### A) KARE DİK PİRAMİT



1)  $Tç = 4.a$       2)  $Ta = a.a = a^2$

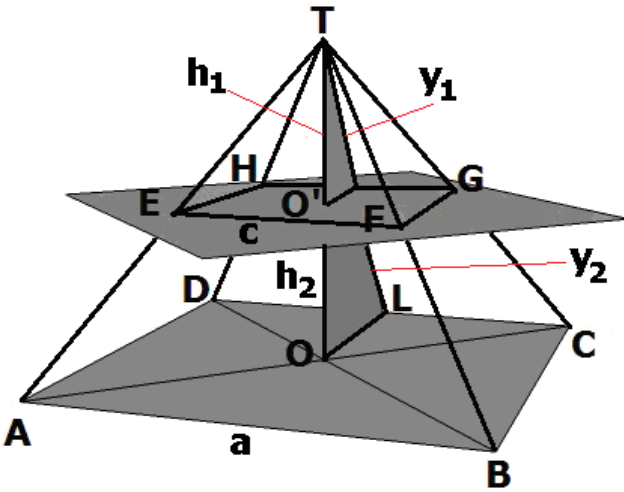
$$Ya = \frac{Tç.y}{2} = \frac{4.a.y}{2}$$

3)  $yA = 2.a.y \Rightarrow Ya = 2.a.y$

4)  $A = Ta + ya = a^2 + 2.a.y = a.(a + 2y)$

5)  $V = \frac{Ta.h}{3} = \frac{a^2.h}{3}$

### B) KARE DİK PİRAMİT BENZERLİK



1)  $(T,EFGH) \sim (T,ABCD)$

2)  $\frac{h1}{h1+h2} = \frac{y1}{y1+y2} = \frac{c}{a} = k \Rightarrow \frac{h1}{h} = \frac{y1}{y} = \frac{c}{a} = k$

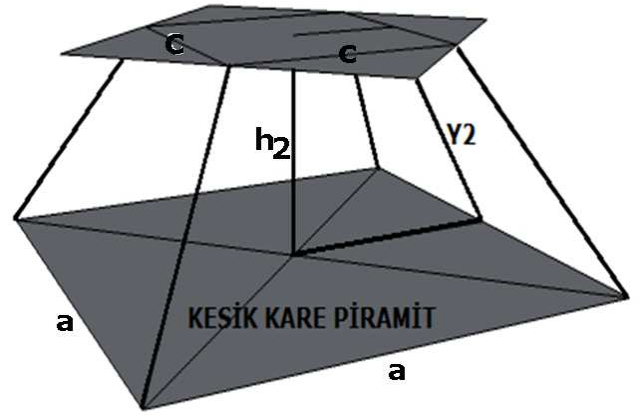
3) Taban alanları oranı benzerlik oranının karesine eşittir.

$$\frac{A1}{A2} = k^2 \Rightarrow \frac{A1}{A2} = \left(\frac{h1}{h}\right)^2 = \left(\frac{y1}{y}\right)^2 = \left(\frac{c}{a}\right)^2$$

4) 3) Hacimleri oranı benzerlik oranının küpüne eşittir.

$$\frac{V1}{V2} = k^3 \Rightarrow \frac{V1}{V2} = \left(\frac{h1}{h}\right)^3 = \left(\frac{y1}{y}\right)^3 = \left(\frac{c}{a}\right)^3$$

### C) KESİK KARE DİK PİRAMİT



1)  $Tçü = 4.c$

2)  $Tça = 4.a$

3)  $Taü = c.c = c^2$

4)  $Taa = a.a = a^2$

5)  $Ya_{Kesik} = \frac{Tça.y}{2} = \frac{Tçü.y1}{2} = \frac{4.a.y}{2} - \frac{4.c.y1}{2}$

$$Ya_{Kesik} = 2.a.y - 2.c.y1 = 2.(ay - cy1)$$

$$AKesik = Taa + Taiü + Yakesik$$

6) a)

$$AKesik = a^2 + c^2 + 2.(ay - cy1)$$

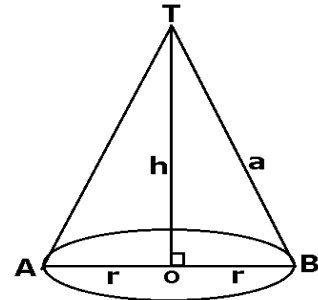
b)  $AKesik = a^2 + c^2 + 2.(a + c).y2$

7)

a)  $V_{kesik} = \frac{Taa.h}{3} - \frac{Taiü.h1}{3} = \frac{a^2.h}{3} - \frac{c^2.h1}{3}$

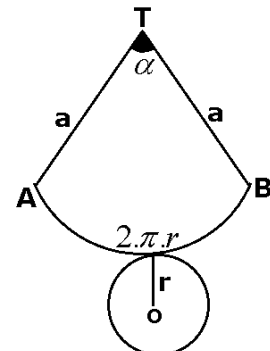
b)  $V_{kesik} = \frac{h2}{3}.(a^2 + c^2 + a.c)$

### D) KONİ PİRAMİT



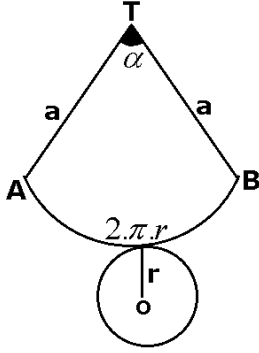
1)  $Tç = 2.\pi.r$

2)  $Ta = \pi.r^2$



$$3) Y_a = \frac{T_{\zeta} \cdot y}{2} = \frac{2 \cdot \pi \cdot r \cdot a}{2} = \pi \cdot r \cdot a$$

$$4) |AB| = T_{\zeta} \Rightarrow \frac{2 \cdot \pi \cdot a \cdot \alpha}{360} = 2 \cdot \pi \cdot r \Rightarrow \frac{r}{a} = \frac{360}{\alpha}$$

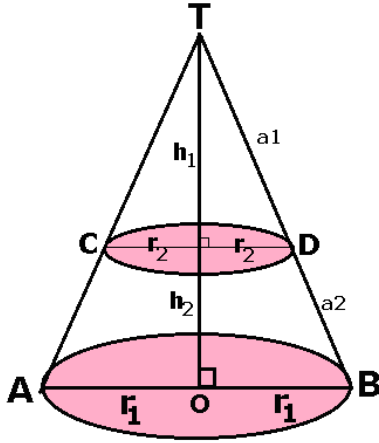


### 5) A = Ta + Ya

$$A = \pi \cdot r^2 + \pi \cdot r \cdot a = \pi \cdot r \cdot (r + a)$$

$$6) V = \frac{Ta \cdot h}{3} = \frac{\pi \cdot r^2 \cdot h}{3}$$

### E) KONİ PİRAMİT BENZERLİK



$$1) (T, AB) \sim (T, CD)$$

$$2) \frac{h_1}{h_1 + h_2} = \frac{a_1}{a_1 + a_2} = \frac{r_1}{r_2} = k \Rightarrow \frac{h_1}{h} = \frac{a_1}{a} = \frac{r_1}{r_2} = k$$

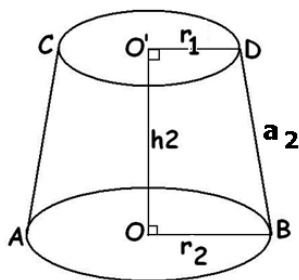
3) Taban alanları oranı benzerlik oranının karesine eşittir.

$$\frac{A_1}{A_2} = k^2 \Rightarrow \frac{A_1}{A_2} = \left(\frac{h_1}{h}\right)^2 = \left(\frac{a_1}{a}\right)^2 = \left(\frac{r_1}{r_2}\right)^2$$

4) 3) Hacimleri oranı benzerlik oranının küpüne eşittir.

$$\frac{V_1}{V_2} = k^3 \Rightarrow \frac{V_1}{V_2} = \left(\frac{h_1}{h}\right)^3 = \left(\frac{a_1}{a}\right)^3 = \left(\frac{r_1}{r_2}\right)^3$$

### F) KESİK KONİ PİRAMİT



$$1) T_{\zeta a} = 2 \cdot \pi \cdot r_2 \quad 2) T_{\zeta \ddot{u}} = 2 \cdot \pi \cdot r_1$$

$$3) T_{aa} = \pi \cdot r_2^2 \quad 4) T_{a\ddot{u}} = \pi \cdot r_1^2$$

$$a) Y_{akesik} = Y_{AB} - Y_{AK}$$

$$5) Y_{akesik} = \pi \cdot r_2 \cdot a - \pi \cdot r_1 \cdot a_1$$

$$b) Y_{akesik} = \pi \cdot (r_1 + r_2) \cdot a_2$$

$$6) A = T_{aa} + T_{a\ddot{u}} + Y_a = \pi \cdot r_2^2 + \pi \cdot r_1^2 + \pi \cdot (r_1 + r_2) \cdot a_2$$

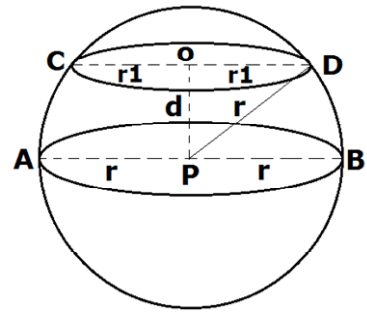
$$A = \pi \cdot r_2^2 + \pi \cdot r_1^2 + \pi \cdot (r_1 + r_2) \cdot a_2$$

$$V_{kesik} = V_B - V_K$$

$$7) a) V_{kesik} = \frac{T_{aa} \cdot h}{3} - \frac{T_{a\ddot{u}} \cdot h_1}{3} = \frac{\pi \cdot r_1^2 \cdot h}{3} - \frac{\pi \cdot r_2^2 \cdot h_1}{3}$$

$$b) V_{kesik} = \frac{\pi \cdot h_2}{3} \cdot (r_1^2 + r_2^2 + r_1 \cdot r_2)$$

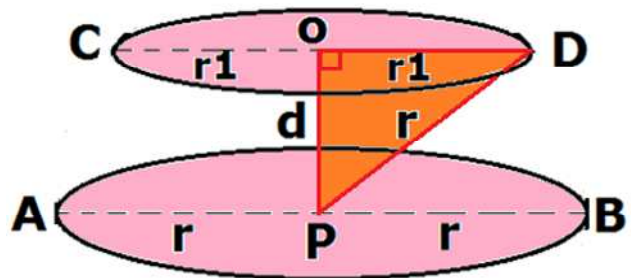
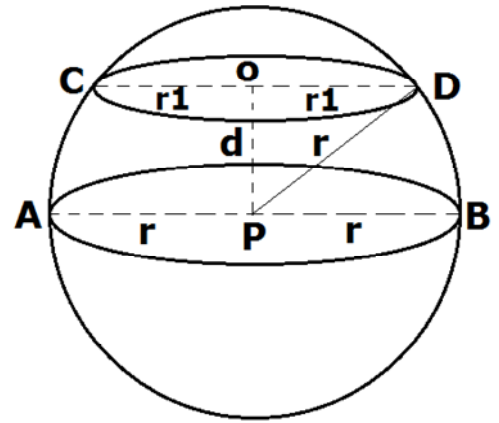
### G) KÜRE PİRAMİT



$$1) A = 4 \cdot \pi \cdot r^2$$

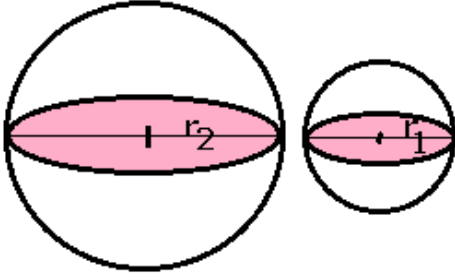
$$2) a) V = \frac{4 \cdot \pi \cdot r^3}{3} \Rightarrow b) V = \frac{\pi \cdot R^3}{6}$$

3) kürenin merkezleri arası uzaklığı



$$r^2 = d^2 + r_1^2$$

#### 4)Küre piramitte benzerlik



İki küre benzer ise;

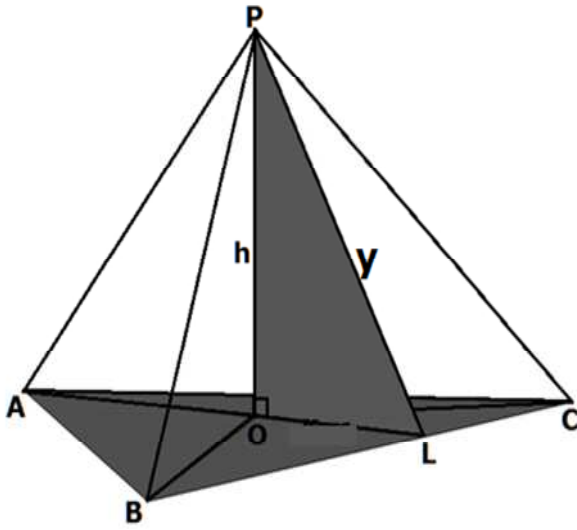
1) Alanlar oranı benzerlik oranının (Yarıçapların oranının)

karesine eşittir.  $\frac{A1}{A2} = \left(\frac{r1}{r2}\right)^2$

2) Hacimler oranı benzerlik oranının (Yarıçapların oranının)

küpüne eşittir.  $\frac{V1}{V2} = \left(\frac{r1}{r2}\right)^3$

#### H) EŞKENAR ÜÇGEN PİRAMİT



1)  $Tç = 3.a$

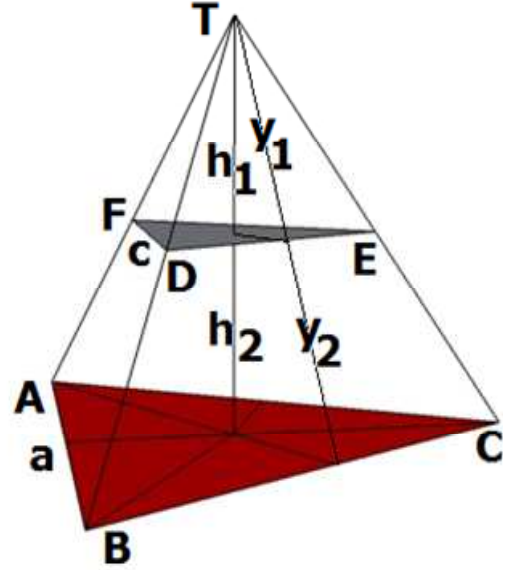
2)  $Ta = \frac{a^2 \cdot \sqrt{3}}{4}$

3)  $YA = \frac{Tç \cdot y}{2}$   
 $YA = \frac{3.a \cdot y}{2}$

4)  $A = TA + YA$   
 $A = \frac{a^2 \cdot \sqrt{3}}{4} + \frac{3.a \cdot y}{2}$

5)  $V = \frac{Ta \cdot h}{3} = \frac{\frac{a^2 \cdot \sqrt{3}}{4} \cdot h}{3}$   
 $V = \frac{a^2 \cdot \sqrt{3} \cdot h}{4} \cdot \frac{1}{3} = \frac{a^2 \cdot \sqrt{3} \cdot h}{12}$

#### K)KESİK EŞKENAR ÜÇGEN PİRAMİT



1) (T,ABC) piramidi ile (T,DEF) piramidi benzerdir.

2) Taban alanları oranı benzerlik oranının karesine eşittir.

$$\frac{A(ABC)}{A(DEF)} = \left(\frac{h}{h_1}\right)^2 = \left(\frac{|TA|}{|TF|}\right)^2 = \left(\frac{|AB|}{|FD|}\right)^2$$

$$\frac{A(ABC)}{A(DEF)} = \left(\frac{h}{h_1}\right)^2 = \left(\frac{a}{c}\right)^2 = \left(\frac{y}{y_1}\right)^2$$

3) Hacimleri oranı benzerlik oranının küpüne eşittir.

$$\frac{V(ABC)}{V(DEF)} = \left(\frac{h}{h_1}\right)^3 = \left(\frac{a}{c}\right)^3 = \left(\frac{y}{y_1}\right)^3$$

Taa=Taban alanı alt  
 Taü=Taban alanı üst  
 Tça=Taban çevresi alt  
 Tçü=Taban çevresi üst  
 Ya=Yanal alan  
 A=yüzey alanı(Bütün alan)

ÖMER ASKERDEN  
 PİRİ MEHMET PAŞA ORTAOKULU  
 UZMAN İLKÖĞRETİM MATEMATİK ÖĞRETMENİ