Geometri formülleri

coddy.tech/math/tr/formulas/geometry

ALAN VE ÇEVRE

Kare

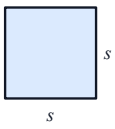
ALAN

$A = s^2$

ÇEVRE

$P = 4s$

s kenar



Dikdörtgen

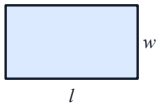
ALAN

$A = lw$

ÇEVRE

$P = 2l + 2w$

l uzunluk w genişlik



Üçgen

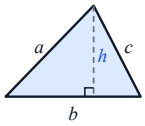
ALAN

$A = \frac{1}{2}bh$

ÇEVRE

$P = a + b + c$

b taban h yükseklik
a, b, c kenarlar



Paralelkenar

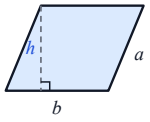
ALAN

$A = bh$

ÇEVRE

$P = 2a + 2b$

b taban h yükseklik
a kenar

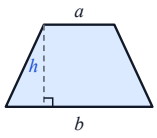


Yamuk

ALAN

$A = \frac{1}{2}(a + b)h$

a, b paralel kenarlar
h yükseklik



Eşkenar dörtgen

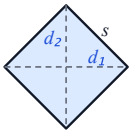
ALAN

$A = \frac{1}{2}d_1d_2$

ÇEVRE

$P = 4s$

d_1, d_2 köşegenler s kenar



Düzgün çokgen

ALAN

$A = \frac{1}{2}aP$

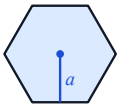
İÇ AÇILAR TOPLAMI

$S = (n - 2) \cdot 180°$

BİR İÇ AÇI

$$\frac{(n - 2) \cdot 180°}{n}$$

a apotem P çevre n kenar sayısı



ÇEMBER VE DAİRE

Daire

ÇEVRE UZUNLUĞU

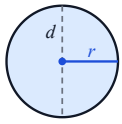
$C = 2\pi r = \pi d$

ALAN

$A = \pi r^2$

$d = 2r$

r yarıçap d çap



Yay ve daire dilimi

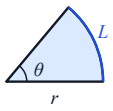
YAY UZUNLUĞU

$$L = \frac{\theta}{360°} \cdot 2\pi r$$

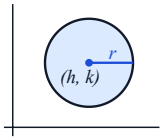
DİLİM ALANI

$$A = \frac{\theta}{360°} \cdot \pi r^2$$

θ merkez açı r yarıçap



Çember denklemi



$(x - h)^2 + (y - k)^2 = r^2$

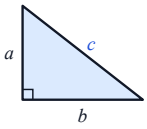
(h, k) merkez r yarıçap

ÜÇGENLER

Pisagor teoremi

$a^2 + b^2 = c^2$

a, b dik kenarlar
c hipotenüs



Açılar

ÜÇGENİN AÇILARI

$\alpha + \beta + \gamma = 180°$

TÜMLER AÇILAR

$\alpha + \beta = 90°$

BÜTÜNLER AÇILAR

$\alpha + \beta = 180°$

Özel dik üçgenler

30-60-90 KENARLARI

$x : x\sqrt{3} : 2x$

45-45-90 KENARLARI

$x : x : x\sqrt{2}$

Eşkenar üçgen

ALAN

$$A = \frac{\sqrt{3}}{4}s^2$$

YÜKSEKLİK

$$h = \frac{\sqrt{3}}{2}s$$

s kenar

Heron formülü

ALAN

$A = \sqrt{s(s - a)(s - b)(s - c)}$

$$s = \frac{a + b + c}{2}$$

a, b, c kenarlar s çevrenin yarısı

HACİM VE YÜZEY ALANI

Küp

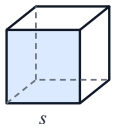
HACİM

$V = s^3$

YÜZEY ALANI

$SA = 6s^2$

s kenar



Dikdörtgenler prizması

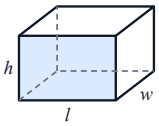
HACİM

$V = lwh$

YÜZEY ALANI

$SA = 2(lw + lh + wh)$

l uzunluk w genişlik
h yükseklik



Prizma

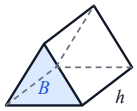
HACİM

$V = Bh$

YÜZEY ALANI

$SA = 2B + Ph$

B taban alanı
P taban çevresi
h yükseklik



Silindir

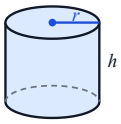
HACİM

$V = \pi r^2 h$

YÜZEY ALANI

$SA = 2\pi r^2 + 2\pi rh$

r yarıçap h yükseklik



Koni

HACİM

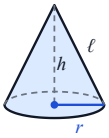
$V = \frac{1}{3}\pi r^2 h$

YÜZEY ALANI

$SA = \pi r^2 + \pi r\ell$

$\ell = \sqrt{r^2 + h^2}$

r yarıçap h yükseklik
ℓ eğik yükseklik



Piramit

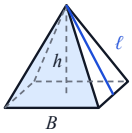
HACİM

$V = \frac{1}{3}Bh$

YÜZEY ALANI

$SA = B + \frac{1}{2}P\ell$

B taban alanı
P taban çevresi
h yükseklik
ℓ eğik yükseklik



Küre

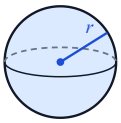
HACİM

$V = \frac{4}{3}\pi r^3$

YÜZEY ALANI

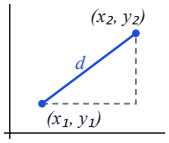
$SA = 4\pi r^2$

r yarıçap



ANALİTİK GEOMETRİ

İki nokta arası uzaklık



$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

(x_1, y_1), (x_2, y_2) iki nokta

Orta nokta formülü

$$M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

(x_1, y_1), (x_2, y_2) iki nokta

Eğim

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

PARALEL DOĞRULAR

$$m_1 = m_2$$

DİK DOĞRULAR

$$m_1 \cdot m_2 = -1$$

m eğim

Doğru denklemi

EĞİM-KESİM NOKTASI BİÇİMİ

$$y = mx + b$$

NOKTA-EĞİM BİÇİMİ

$$y - y_1 = m(x - x_1)$$

m eğim b y eksenini kestiği nokta