

Geometri

Triangel

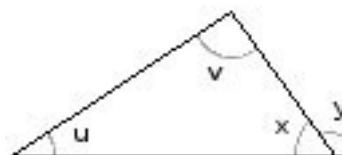
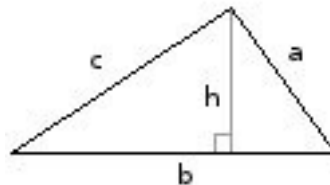
$$Arean = \frac{bh}{2}$$

$$\text{Herons Arean} = \sqrt{s(s-a)(s-b)(s-c)},$$
$$\text{där } s = \frac{a+b+c}{2}$$

$$\text{vinkelsumma} = u + v + x = 180^\circ = \pi [\text{rad}]$$

$$\text{sidovinklar} = x + y = 180^\circ = \pi [\text{rad}]$$

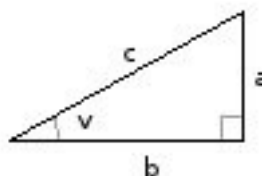
$$\text{Yttervinkelsatsen: } u + v = y$$



Rätvinkligtriangel:

$$\text{pythagoras sats: } a^2 + b^2 = c^2$$

se även trigonometri

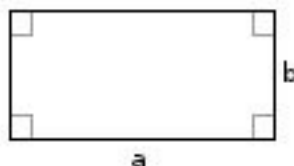


Fyrkant

Rektangel:

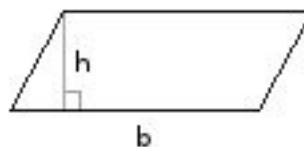
$$Arean = bh$$

$$\text{Omkrets} = 2b + 2h$$



Parallelogram:

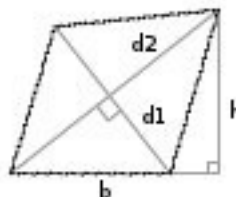
$$Arean = bh$$



Romb:

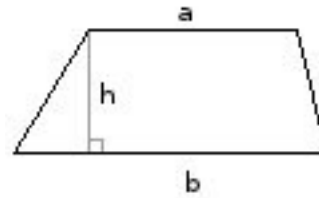
$$Arean = bh = \frac{d_1 d_2}{2}$$

Diagonalerna korsar varandra med rätavinklar.



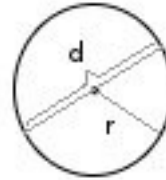
Pralleltrapets:

$$A_{\text{rean}} = \frac{h(a+b)}{2}$$

**Cirklar**

$$A_{\text{rean}} = \pi r^2 = \frac{\pi d^2}{4}$$

$$Omkrets = 2\pi r = \pi d$$

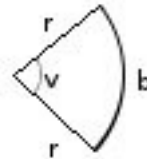
**Cirkelsektor:**

$$Bågen = 2\pi r \frac{\alpha}{360} = vr$$

$$A_{\text{rean}} = \pi r^2 \frac{\alpha}{360} = \frac{br}{2}$$

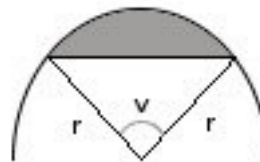
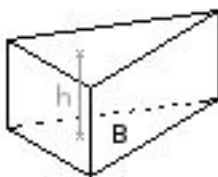
α är vinkeln i grader

v är vinkeln i radianer

**Cirkelsegment:**

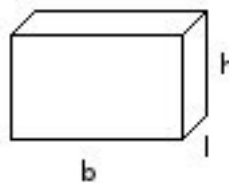
$$A_{\text{rean}} = \frac{r^2(v - \sin(v))}{2}$$

v är vinkeln i radianer

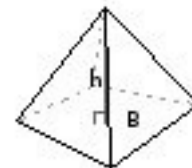
**Prisma**

$$Volymen = Bh,$$

där B är basytans area

Räblock

$$Volymen = blh$$

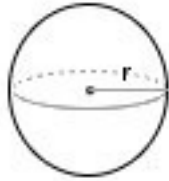
Pyramid

$$Volym = \frac{Bh}{3},$$

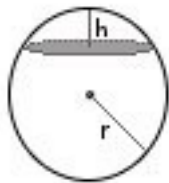
där B är basytans area

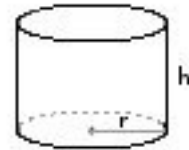
klot(svär)

$$\text{Volym} = \frac{4\pi r^3}{3}$$
$$\text{Area} = 4\pi r^2$$

**Klotsegment:**

$$\text{Volym} = \frac{\pi h^2(3r-h)}{3}$$
$$\text{Buktiga ytans area} = 2\pi rh$$

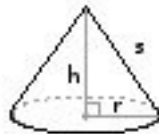


Rak cirkulär cylinder

$$\text{Volym} = \pi r^2 h$$
$$\text{Mantelarean} = 2\pi rh$$
$$\text{Totala arean} = 2\pi rh + 2\pi r^2 = 2\pi r(h + r)$$

kon

$$\text{Volym} = \frac{\pi r^2 h}{3}$$
$$\text{Mantelarean} = \pi rs$$
$$\text{Totala arean} = \pi rs + \pi r^2 = \pi r(s + r)$$

**Stympad kon:**

$$\text{Volym} = \frac{\pi h}{3} \cdot (R^2 + Rr + r^2)$$
$$\text{Mantelarean} = \pi s(R + r)$$

