

Formler till nationellt prov i matematik – Kurs A

PREFIX

Beteckning	T	G	M	k	h	d	c	m	μ
Namn	tera	giga	mega	kilo	hekto	deci	centi	milli	mikro
Tiopotens	10^{12}	10^9	10^6	10^3	10^2	10^{-1}	10^{-2}	10^{-3}	10^{-6}

POTENSER

För alla tal x och y och positiva tal a gäller

$$a^x \cdot a^y = a^{x+y} \qquad \frac{a^x}{a^y} = a^{x-y} \qquad (a^x)^y = a^{xy}$$

$$a^{\frac{1}{2}} = \sqrt{a} \qquad a^{\frac{1}{3}} = \sqrt[3]{a}$$

$$a^{-x} = \frac{1}{a^x} \qquad a^0 = 1$$

FUNKTIONSLÄRA

Linjär funktion

$y = kx + m$ om $y = kx$ är y proportionell mot x

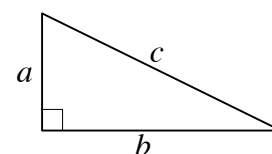
Exponentialfunktion

$y = C \cdot a^x$

GEOMETRI

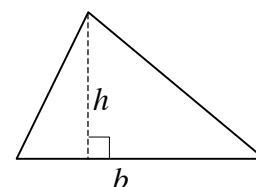
Pythagoras sats

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



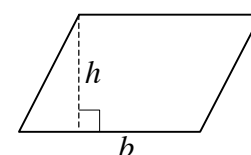
Triangel

$$\text{area} = \frac{bh}{2}$$



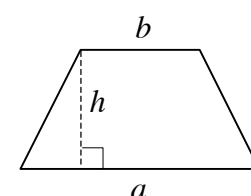
Parallelogram

$$\text{area} = bh$$



Parallelltrapets

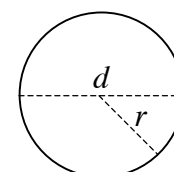
$$\text{area} = \frac{h(a+b)}{2}$$



Cirkel

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

$$\text{omkrets} = 2\pi r = \pi d$$

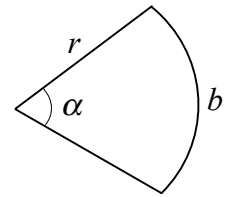


GEOMETRI

Cirkelsektor

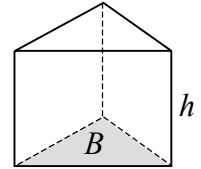
$$\text{bågen } b = \frac{\alpha}{360} \cdot 2\pi r$$

$$\text{area} = \frac{\alpha}{360} \cdot \pi r^2 = \frac{br}{2}$$



Prisma

$$\text{volym} = Bh$$

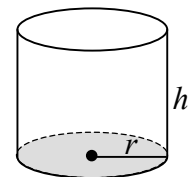


Cylinder

Rak cirkulär cylinder

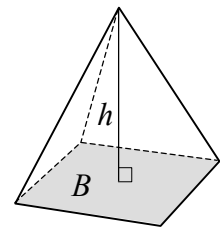
$$\text{volym} = \pi r^2 h$$

$$\text{mantelarea} = 2\pi r h$$



Pyramid

$$\text{volym} = \frac{Bh}{3}$$

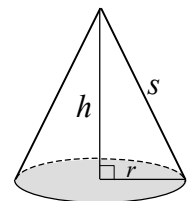


Kon

Rak cirkulär kon

$$\text{volym} = \frac{\pi r^2 h}{3}$$

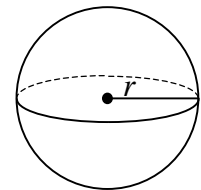
$$\text{mantelarea} = \pi r s$$



Klot

$$\text{volym} = \frac{4\pi r^3}{3}$$

$$\text{area} = 4\pi r^2$$



TRIGONOMETRI

Rätvinkliga triangeln

$$\cos v = \frac{a}{c}$$

$$\sin v = \frac{b}{c}$$

$$\tan v = \frac{b}{a}$$

