

# 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  $x$

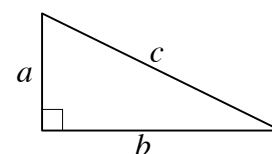
**Exponentialfunktion**

$$y = C \cdot a^x$$

## GEOMETRI

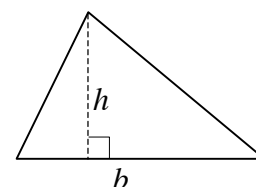
**Pythagoras sats**

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



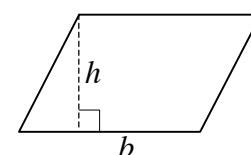
**Triangel**

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



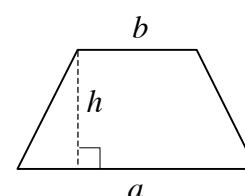
**Parallelogram**

$$\text{area} = bh$$



**Parallelltrapets**

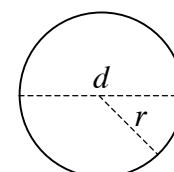
$$\text{area} = \frac{h(a+b)}{2}$$



**Cirkel**

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

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

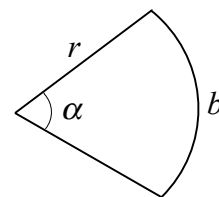


## GEOMETRI

### Cirkelsektor

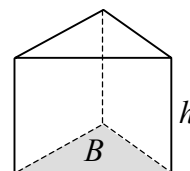
$$\text{bågen } b = \frac{\alpha}{360} \cdot 2\pi r$$

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



### Prisma

$$\text{volym} = Bh$$

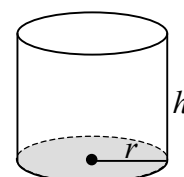


### Cylinder

Rak cirkulär cylinder

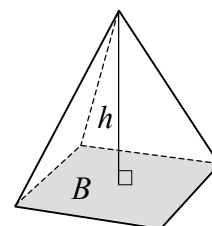
$$\text{volym} = \pi r^2 h$$

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



### Pyramid

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

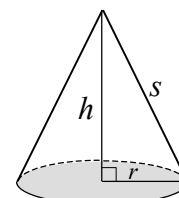


### Kon

Rak cirkulär kon

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

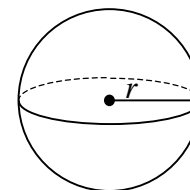
$$\text{mantelarea} = \pi r s$$



### Klot

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

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



## TRIGONOMETRI

### Rätvinkliga triangeln

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

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

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

