

## Formler i matematik som får användas på ämnesprovet i årskurs 9

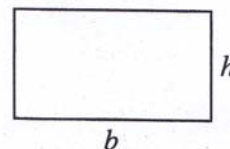
### PREFIX

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

### GEOMETRI

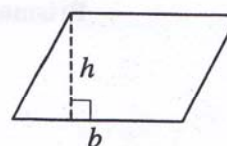
#### Rektangel

$$\text{area} = b \cdot h$$



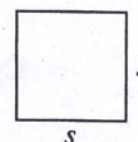
#### Parallelogram

$$\text{area} = b \cdot h$$



#### Kvadrat

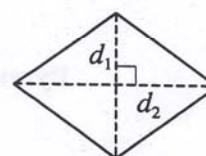
$$\text{area} = s^2$$



#### Romb

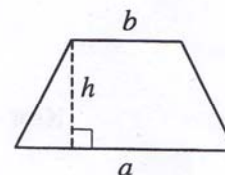
$$\text{area} = \frac{d_1 \cdot d_2}{2}$$

$d_1$  och  $d_2$  är diagonaler



#### Parallelltrapets

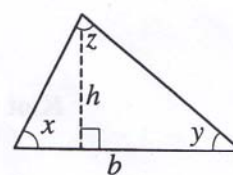
$$\text{area} = \frac{h(a+b)}{2}$$



#### Triangel

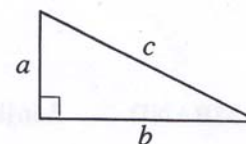
$$\text{area} = \frac{b \cdot h}{2}$$

$$\text{vinkelsumma} = x + y + z = 180^\circ$$



#### Pythagoras sats

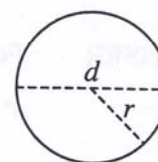
$$a^2 + b^2 = c^2$$



#### Cirkel

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

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



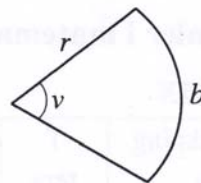
Var god vänd

**GEOMETRI**  
fortsättning

**Cirkelsektor**

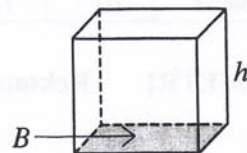
$$\text{bågen } b = \frac{v}{360} \cdot 2\pi r$$

$$\text{area} = \frac{v}{360} \cdot \pi r^2 = \frac{b \cdot r}{2}$$



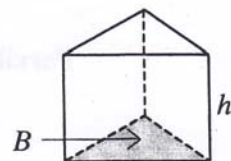
**Rätblock**

$$\text{volym} = B \cdot h$$



**Prisma**

$$\text{volym} = B \cdot h$$

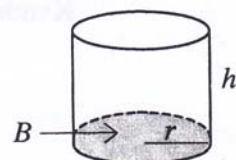


**Cylinder**

*Rak cirkulär cylinder*

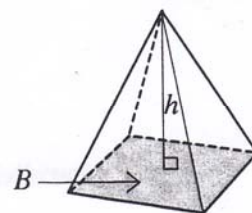
$$\text{volym} = B \cdot h$$

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



**Pyramid**

$$\text{volym} = \frac{B \cdot h}{3}$$

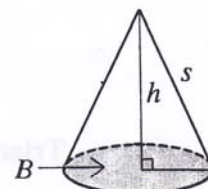


**Kon**

*Rak cirkulär kon*

$$\text{volym} = \frac{B \cdot h}{3}$$

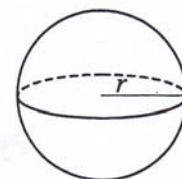
$$\text{mantelarea} = \pi r s$$



**Klot**

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

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



**SAMBAND**

**Linjär funktion**

$$y = kx + m$$

om  $y = kx$  är y proportionell mot x

**POTENSER**

För alla tal x och y och positiva tal a gäller:

$$a^x \cdot a^y = a^{x+y}$$

$$\frac{a^x}{a^y} = a^{x-y}$$

$$(a^x)^y = a^{xy}$$

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

$$a^0 = 1$$