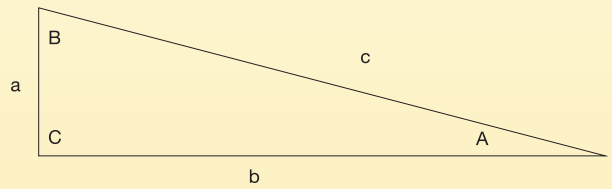
STELLRAM

Formula

V_c	=	$\frac{D_m \times \pi \times n}{1000}$	**Cutting speed (m/min)**
n	=	$\frac{V_c \times 1000}{Dm \times \pi}$	**Spindle speed (rev/min)**
P_c	=	$\frac{V_c \times a_p \times f_n \times k_c}{60 \times 1000 \times \eta}$	**Power demand (kW)**
Q_z	=	$V_c \times f_n \times a_p$	**Metal removal (cm^3/min)**
T_c	=	$\frac{l_m}{f_n \times n}$	**Period of engagement (min)**

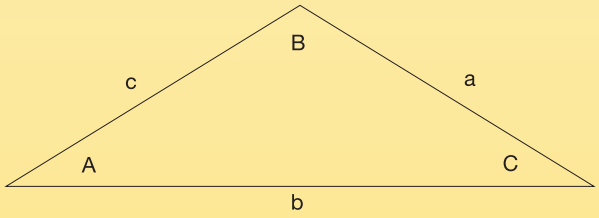
Terminology

D_m	=	Machined diameter	mm
V_c	=	Cutting speed	m/min
n	=	Spindle speed	rev/min
T_c	=	Period of engagement	min
Q_z	=	Metal removal	cm^3/min
l_m	=	Machined length	mm
P_c	=	Power demand	kW
K_c	=	Specific cutting force	N/mm^2
f_n	=	Feed per revolution	mm/rev
k_r	=	Cutting edge angle	degree
R max	=	Profile depth	µm
r_ε	=	Insert nose radius	mm
a_p	=	Depth of cut	mm
η	=	Efficiency	



Trigonometrical Equivalents

Dimension Given	Part to be Found				
	A	B	a	b	c
a & c	sin A = a ÷ c	cos B = a ÷ c		$b = \sqrt{c^2 - a^2}$	
a & b	tan A = a ÷ b	cos B = a ÷ b			$c = \sqrt{a^2 + b^2}$
c & b	cos A = b ÷ c	sin B = b ÷ c	$a = \sqrt{c^2 - b^2}$		
A & a		B = 90° - A		b = a x cot A	c = a ÷ sin A
A & b		B = 90° - A	a = b x tan A		c = b ÷ cos A
A & c		B = 90° - A	a = c x sin A	b= c x cos A	



Trigonometrical Equivalents

Dimension Given	Parts to be Found	Formula
a b c	A	$\cos A = b^2+c^2-a^2 \div 2bc$
a b A	B	sin B = b x sin A ÷ a
a b A	C	C = 180 - (A + B)
a A B	b	b = a x sin B ÷ sin A
a A B	c	c = (a x sin C ÷ sin A) x (a x sin (180 - A - B) ÷ sin A)
a b C	B	B = 180 - (A + C)