

## Goniometrické funkce

$x$	$0^{\circ}$	$30^{\circ}$	$45^{\circ}$	$60^{\circ}$	$90^{\circ}$
$\sin x$	0	$\frac{1}{2}$	$\frac{1}{2} \cdot \sqrt{2}$	$\frac{1}{2} \cdot \sqrt{3}$	1
$\cos x$	1	$\frac{1}{2} \cdot \sqrt{3}$	$\frac{1}{2} \cdot \sqrt{2}$	$\frac{1}{2}$	0
$\operatorname{tg} x$	0	$\frac{1}{3} \sqrt{3}$	1	$\sqrt{3}$	-
$\operatorname{cotg} x$	-	$\sqrt{3}$	1	$\frac{1}{3} \sqrt{3}$	0

$$\sin(x+y) = \sin x \cdot \cos y + \cos x \cdot \sin y$$

$$\sin(x-y) = \sin x \cdot \cos y - \cos x \cdot \sin y$$

$$\cos(x+y) = \cos x \cdot \cos y - \sin x \cdot \sin y$$

$$\cos(x-y) = \cos x \cdot \cos y + \sin x \cdot \sin y$$

$$\sin 2x = 2 \cdot \sin x \cdot \cos x$$

$$\cos 2x = \cos^2 x - \sin^2 x$$

$$\sin^2 x + \cos^2 x = 1$$

$$\sin \alpha + \sin \beta = 2 \cdot \sin \frac{\alpha + \beta}{2} \cdot \cos \frac{\alpha - \beta}{2}$$

$$\sin \alpha - \sin \beta = 2 \cdot \cos \frac{\alpha + \beta}{2} \cdot \sin \frac{\alpha - \beta}{2}$$

$$\cos \alpha + \cos \beta = 2 \cdot \cos \frac{\alpha + \beta}{2} \cdot \cos \frac{\alpha - \beta}{2}$$

$$\cos \alpha - \cos \beta = -2 \cdot \sin \frac{\alpha + \beta}{2} \cdot \sin \frac{\alpha - \beta}{2}$$

## Mocniny

$$(a \pm b)^3 = a^3 \pm 3a^2b + 3ab^2 \pm b^3$$

$$A^3 \pm B^3 = (A \pm B)(A^2 \mp AB + B^2)$$

## Mocninné součty

$$x_1^2 + x_2^2 = (x_1 + x_2)^2 - 2x_1x_2$$

$$x_1^3 + x_2^3 = (x_1 + x_2)^3 - 3x_1x_2(x_1 + x_2)$$

$$x_1^4 + x_2^4 = (x_1 + x_2)^4 - 4x_1x_2(x_1^2 + x_2^2) - 6x_1^2x_2^2$$

## Logaritmy - pro přípustné hodnoty:

$$\log_a(xy) = \log_a x + \log_a y$$

$$\log_a\left(\frac{x}{y}\right) = \log_a x - \log_a y$$

$$\log_a x^k = k \cdot \log_a x$$

$$\log_a x = \frac{\log_b x}{\log_b a}$$

$$x = a^{\log_a x}$$