1. Спростіть вираз:

1.1. $1-\cos^2\alpha =$

1.2. $5+tg\beta\,\mathrm{ctg}\,\beta = 5+$ $\quad =$

1.3. $\sin\gamma\cdot\mathrm{ctg}\,\gamma = \sin\gamma\cdot$ —— $=$

2. Обчисліть:

2.1. $\sin\ 240^\circ = \sin($ $\quad) =$ $\quad ^\circ =$

2.2. $\cos\ \frac{13\pi}{6} = \cos($ $\quad) =$ $\quad ^\circ =$

2.3. $\mathrm{ctg}\,300^\circ = \mathrm{ctg}($ $\quad) =$ $\quad ^\circ =$

α	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$
	0°	30°	45°	60°	90°
$\sin\alpha$	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1
$\cos\alpha$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0

α	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$
	0°	30°	45°	60°	90°
$\mathrm{tg}\,\alpha$	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	–
$\mathrm{ctg}\,\alpha$	–	$\sqrt{3}$	1	$\frac{1}{\sqrt{3}}$	0

3. Спростіть вираз

$$\frac{\sin(-\alpha)}{1-\cos(-\alpha)} + \frac{\cos\left(\frac{\pi}{2}-\alpha\right)}{1+\cos\alpha} = \frac{\qquad}{1} + \frac{\qquad}{1+\cos\alpha} =$$

$$= \frac{-2\cdot}{(\qquad)\cdot(1+\cos\alpha)} = \frac{-2\cdot}{\qquad} = -2\cdot$$