α	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$
	30^0	45^0	60^0
$\sin\alpha$	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$
$\cos\alpha$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$
$\operatorname{tg}\alpha$	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$
$\operatorname{ctg}\alpha$	$\sqrt{3}$	1	$\frac{\sqrt{3}}{3}$

1) $\left(2\operatorname{tg}\frac{\pi}{6} - \operatorname{tg}\frac{\pi}{3}\right) : \cos\frac{\pi}{6} =$

$= \left(2\cdot\frac{\sqrt{3}}{3} - \sqrt{3}^{\,3}\right) : \frac{\sqrt{3}}{2} =$

$= \frac{2\sqrt{3} - 3\sqrt{3}}{3}\cdot\frac{2}{\sqrt{3}} = -\frac{\cancel{\sqrt{3}}}{3}\cdot\frac{2}{\cancel{\sqrt{3}}} = -\frac{2}{3}$

2) $2\cos^2\frac{\pi}{6} - \sin^2\frac{\pi}{3} + \operatorname{tg}\frac{\pi}{6}\cdot\operatorname{ctg}\frac{\pi}{3} =$

$= 2\cdot\left(\frac{\sqrt{3}}{2}\right)^2 - \left(\frac{\sqrt{3}}{2}\right)^2 + \frac{\sqrt{3}}{3}\cdot\frac{\sqrt{3}}{3} =$

$= 2\cdot\frac{3}{4} - \frac{3}{4} + \frac{3}{9} = \frac{6}{4} - \frac{3}{4} + \frac{1}{3} = \frac{3}{4}^{\backslash 3} + \frac{1}{3}^{\backslash 4} = \frac{7}{12}.$