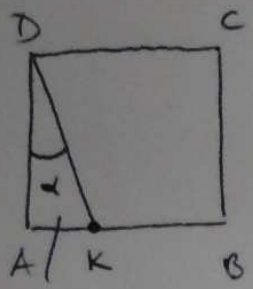
2.05



$\frac{|AK|}{|KB|} = \frac{2}{3}$ $|KB| = \frac{3}{2}|AK|$

$|AK| = \frac{2}{3}|KB|$

UŽITÍM VHODNÝCH TRIGONOMETRICKÝCH

$tg\alpha = \frac{|AK|}{|AD|} = \frac{|AK|}{|AB|}$ → $tg\alpha = \frac{|AK|}{\frac{5}{2}|AK|}$

$|AD| = |AB|$

UŽITÍM $|AB|$

$|AB| = |AK| + |KB|$

$tg\alpha = \frac{2}{5}$

$tg\alpha = \frac{\sin\alpha}{\cos\alpha}$

$\frac{\sin\alpha}{\cos\alpha} = \frac{2}{5}$

$\sin\alpha = \frac{2\cos\alpha}{5}$

$|AB| = |AK| + \frac{3}{2}|AK|$

$|AB| = \frac{2+3}{2}|AK|$

$|AB| = \frac{5}{2}|AK|$

Z VZTAHŮ TRIGONOMETRICKÝCH

$\cos\alpha = \sqrt{1-\sin^2\alpha}$

$\cos\alpha = \sqrt{1-\left(\frac{2\cos\alpha}{5}\right)^2}$

$\cos\alpha = \sqrt{1-\frac{4\cos^2\alpha}{25}}\ /^2$

$\cos^2\alpha = 1 - \frac{4\cos^2\alpha}{25}$

$\cos^2\alpha + \frac{4\cos^2\alpha}{25} = 1$

$\frac{25\cos^2\alpha + 4\cos^2\alpha}{25} = 1$

$\frac{29\cos^2\alpha}{25} = 1 \quad :/\frac{29}{25}$

$\cos^2\alpha = \frac{25}{29}\ /^2$

OBLÍČÍME VÝRAZ

$5tg\alpha - \cos^2\alpha =$

$= 5 \cdot \frac{2}{5} - \frac{25}{29} =$

$= 2 - \frac{25}{29} = \frac{58-25}{29} =$

$= \frac{33}{29}$