skalarni soucin

- $||v|| \geq 0$ a 0 nastane pouze pro $v = 0$
- $||\alpha v|| = |\alpha|||v||$
- $||u + v|| \leq ||u|| + ||v||$

priklady norem:
na jednotkove kruznici: (manhatonova norma)
$1 = \sqrt{x^2 + (x - y)^2 + y^2}$
nam vykresli elipsu

cebisevova norma nam vykresli "ctverec"kde se s rostoui odmocninou kulati rohy

tvrzeni:
pro normy ind. skalarnich soucinem plati:
$||x - y||^2 + ||x + y||^2 = 2||x||^2 + 2||y||^2$

u **a** v **jsou kolme prave kdyz:** $\langle u|v\rangle = 0$

28.02.

$$||x|| = \sqrt{\langle x, x\rangle}$$
$$z_i' = \frac{z_i}{||z_i||}$$
$$x_2 = \langle x_2|z_1\rangle z_1 + \langle x_2|z_2\rangle z_2;\ y_2 = x_2 - \langle y_2|z_1\rangle z_1$$

$x_1 = (2, 0, 1, 2)^T$
$x_2 = (4, 3, 2, 4)^T$
$x_3 = (6, -5, 3, 6)^T$
$x_4 = (6, -5, 3, 6)^T$
... znormalizujeme
$z_1 = (\frac{2}{3}, 0, \frac{1}{3}, \frac{2}{3})$
$z_2 = (0, 1, 0, 0)$
$y_3 = (0, 0, 0, 0)$
$z_4 = (\frac{1}{3}, 0, \frac{2}{3}, \frac{-2}{3})$