

$$x = 0, 1$$

Pokaži da velja \*

$$x = \sum_{i=1}^{\infty} (2^{-k_i} + 2^{-l_i} - 1)$$

b) linearni zapis za  $x$

c) zapis v IEEE formi

IEEE754

enojna natančnost  $P(2, 24, -125, 128)$

$$(-1)^{\sigma} (1+m) 2^{\tilde{e}-127}$$

$m$  dolžine 23

$\tilde{e}$  dolžine 8

$\sigma$  dolžine 1

dvajna natančnost  $P(2, 53, -1021, 1024)$

$$(-1)^{\sigma} (1+m) 2^{\tilde{e}-1023}$$

$m$  52

$\tilde{e}$  11

$\sigma$  1

$$a) X = \sum_{i=1}^{\infty} 2^{-4i} = \frac{\frac{1}{16}}{1 - \frac{1}{16}} + \frac{1}{2} \frac{\frac{1}{16}}{1 - \frac{1}{16}} = \frac{2}{2 \cdot 16} \frac{16}{16-1} = \frac{1}{15} = 0,1$$

$$b) 0,0001100110011 = 0,0\overline{0011}_{(2)}$$

$$c) \begin{aligned} &1,1\overline{0011} \cdot 2^{-4} = \\ &1 + 0,1\overline{0011} \cdot 2^{-4} \end{aligned}$$

$$0,100110\dots\dots 001101$$

$$\tilde{e} - 127 = -4 \Rightarrow e = 123 = 1111011$$

$$\begin{array}{rcl} 123 : 2 = 61 & 1 \\ 61 : 2 = 30 & 1 \\ 30 : 2 = 15 & 0 \\ 15 : 2 = 7 & 1 \\ 7 : 2 = 3 & 1 \\ 3 : 2 = 1 & 1 \\ 1 : 2 = 0 & 1 \end{array}$$

$$x = 2^{-1} + 2^{-k} + 2^{-t}$$

$$y = 2^{-1} + 2^{-k}$$

$$k = \frac{t}{2} + 1$$

$$t = 2k - 2$$

z obravnave relativne napake pdežile da  
izračunari direktno stabilen

$x^2 + y^2$  izračunamo z  
izrazom

$$x \cdot x - y \cdot y$$

$$x^2 = (2^{-1} + 2^{-k} + 2^{-t})^2 = 2^{-2} + 2^{-2k} + 2^{-2t} + 2 \cdot 2^{-1-k} + 2 \cdot 2^{-k-t} + 2 \cdot 2^{-t-1} =$$

$$\cancel{2^{-2}} + \cancel{2^{-2k}} + 2^{-4k+4} + \cancel{2^{-k}} + \cancel{2^{-k-t+1}} + 2^{-t}$$

$$y^2 = (2^{-1} + 2^{-k})^2 = 2^{-2} + \cancel{2^{-k}} \cdot \cancel{2^{-k}} + 2^{-2k}$$

$$x^2 - y^2 = 2^{-4k+4} + 2^{-k-t+1} + 2^{-t}$$

$$= 2^{-2t} + 2^{-t} + 2^{-k-t+1}$$

$$fl(x) = 0, \overset{-2}{0}, \overset{-k}{0}, \dots, \overset{-t}{1}, \dots, \overset{-2k}{1}, \overset{-t-k+1}{0}, \dots, 1, \dots =$$

$$= 0, 0, 1, \dots, 1, \dots, 1, 1$$

$$fl(y) = 0, \overset{-k}{0}, \overset{-t}{0}, \dots, \overset{-k}{1}, \dots, \overset{-t}{0}, \overset{-k}{0}, \overset{-t}{1} = 0, 0, 1, \dots, 1, \dots, 0, 1, 0$$

niveč denar zad:

zato izberemo številos  
soda zadnjo številko, ker je  
1 in megla  $2^{-k}$  zadnja cifra  
v ~~zadnji~~ zpisu