

znaménko: třetí pořadí

$$p \left(\begin{array}{cccccc} 1 & 3 & 5 & 7 & \dots & 2n-1 \\ 2 & 4 & 6 & 8 & \dots & 2n \end{array} \right), 2, 4, 6, 8, \dots, 2n$$

$$\begin{array}{c|c|c} 1 & - & 0 \\ 3 & 2 & 1 \\ 5 & 2, 4 & 2 \\ 7 & 2, 4, 6 & 3 \\ \vdots & \vdots & \vdots \\ 2n-1 & & n-1 \end{array}$$

$$0+1+2+\dots+(n-1) = \frac{n}{2}(n-1) =$$

$$\text{sgn}(p) = (-1)^{\frac{n}{2}(n-1)}$$

počet inverzí v poř.

$$\left(\begin{array}{cccccc} 2 & 4 & 6 & 8 & \dots & 2n \\ 1 & 3 & 5 & 7 & \dots & 2n-1 \end{array} \right)$$

$$\begin{array}{c} 2 \\ 4 \\ 6 \\ \vdots \\ 2n \end{array} \quad \begin{array}{c} 1 \\ 2 \\ 3 \\ 4 \\ \vdots \\ \frac{n}{2} \end{array} \quad \begin{array}{c} 1 \\ 1 \\ 1 \\ \vdots \\ 1 \end{array}$$

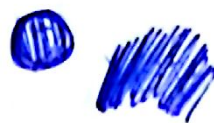
$$1+2+3+4+\dots+\frac{n}{2} = \frac{n}{2}(n+1) - \sum_{k=1}^n \frac{n+k}{2}$$

$$= \frac{n^2+n}{2} - \frac{n^2+\frac{n^2+n}{2}}{2} = \frac{2n^2+2n-2n^2-n}{4} = \frac{n}{4}$$

11. č. 10. 11. 12.

počet inverzí v pořadí

$$\left(\begin{array}{cccccc} 1 & 4 & 7 & \dots & 3n-2 \\ 2 & 5 & 8 & \dots & 3n-1 \\ 3 & 6 & 9 & \dots & 3n \end{array} \right)$$



$$1 \ 4 \ 7 \ \dots \ 2 \ 5 \ 8 \ \dots \ 3n-1 \ 3 \ 6 \ 9 \ \dots \ 3n$$

$$\begin{array}{c} n \\ 1 \\ 2 \\ 3 \\ 4 \end{array} \quad \begin{array}{cc} 1 & 0 \\ 4 & 2 \\ 7 & 4 \\ 10 & 6 \end{array} \quad \begin{array}{cc} 1 & 2 \\ 2 & 5 \\ 3 & 8 \\ 4 & 3n-1 \end{array} \quad \begin{array}{c} 0 \\ 1 \\ 2 \\ n-1 \end{array}$$

$$3n-2 \dots 2(n-1)$$

$\subset \mathbb{Q}[\sqrt{2}]$... invertibilni prvci?

$$\mathbb{Q}[\sqrt{2}] = \{a + b\sqrt{2}; a, b \in \mathbb{Q}\}$$

predpoklad:

$$(a + b\sqrt{2})^{-1} = \frac{1}{a + b\sqrt{2}} \cdot \frac{a - b\sqrt{2}}{a - b\sqrt{2}} = \frac{a - b\sqrt{2}}{a^2 - 2b^2} =$$

$$= \underbrace{\frac{a}{a^2 - 2b^2}}_{\in \mathbb{Q}} + \underbrace{\left(\frac{-b}{a^2 - 2b^2}\right)}_{\in \mathbb{Q}} \sqrt{2} \quad \text{petri' lam}$$

