NEVILLOV ALGORITMUS

i	0	1	2
x_i	1	2	-4
y_i	3	-5	4

UZLOVÉ BODY: x_0, x_1, x_2

ODPOVEDAJÚCE FUNKČNÉ HODNOTY: y_0, y_1, y_2

STUPEŇ POLYNÓMU INTERPOLÁCIE $p(x)$: $m = 2$

INTERPOLAČNÉ POLYNÓMY:

$$0 \le i < j \le m: \quad P_{i,j}(x) = \frac{(x - x_j) P_{i,j-1}(x) - (x - x_i) P_{i+1,j}(x)}{x_i - x_j}$$

$$0 \le i \le m: \quad P_{i,i} = y_i$$

HĽADÁM $p(x)$ PRE $x = -1$

$P_{0,0}(x) = y_0 = 3$ $\quad P_{1,1}(x) = y_1 = -5$ $\quad P_{2,2}(x) = y_2 = 4$

$$P_{0,1} = \frac{(x - x_1) P_{0,0}(x) - (x - x_0) P_{1,1}(x)}{x_0 - x_1} = \frac{(-1-2)\cdot 3 - (-1-1)\cdot(-5)}{1-2} =$$

$$= \frac{-3 \cdot 3 - (-2)\cdot(-5)}{1-2} = \frac{-9-10}{(-1)} = 19$$

$$P_{1,2} = \frac{(x - x_2) P_{1,1}(x) - (x - x_1) P_{2,2}(x)}{x_1 - x_2} = \frac{(-1-(-4))\cdot(-5) - (-1-2)\cdot 4}{2-(-4)} =$$

$$= \frac{3\cdot(-5) - (-3)\cdot 4}{6} = \frac{-15+12}{6} = -\frac{1}{2}$$

$$P_{0,2} = \frac{(x - x_2) P_{0,1}(x) - (x - x_0) P_{1,2}(x)}{x_0 - x_2} = \frac{(-1-(-4))\cdot 19 - (-1-1)\cdot(-\frac{1}{2})}{1-(-4)} =$$

$$= \frac{3 \cdot 19 - 1}{5} = \frac{56}{5} = 11{,}2$$