Ležandrovi $\quad [-1, 1] \quad p(x) \equiv 1$

$$(n+1) L_{n+1}(x) = (2n+1) x L_n(x) - n L_{n-1}(x)$$

$$(1-x^2) L_n''(x) - 2x L_n'(x) + n(n+1) L_n(x) = 0$$

$$L_n(x) = \frac{1}{2^n n!} \frac{d^n}{dx^n} \left[(x^2-1)^n \right]$$

Čebiševljevi $\quad [-1, 1] \quad p(x) = \frac{1}{\sqrt{1-x^2}}$

$$T_{n+1}(x) = 2x T_n(x) - T_{n-1}(x)$$

$$(1-x^2) T_n''(x) - x \cdot T_n'(x) + n^2 T_n(x) = 0$$

$$T_n(x) = \cos(n \arccos x) \qquad -1 \leq x \leq 1$$

Lagerovi $\quad [0, \infty) \quad p(x) = e^{-x}$

$$(n+1) L_{n+1}(x) = (2n+1-x) L_n(x) - n L_{n-1}(x)$$

$$x L_n''(x) + (1-x) L_n'(x) + n L_n(x) = 0$$

$$L_n(x) = \frac{e^x}{n!} \frac{d^n}{dx^n} \left[e^{-x} x^n \right]$$
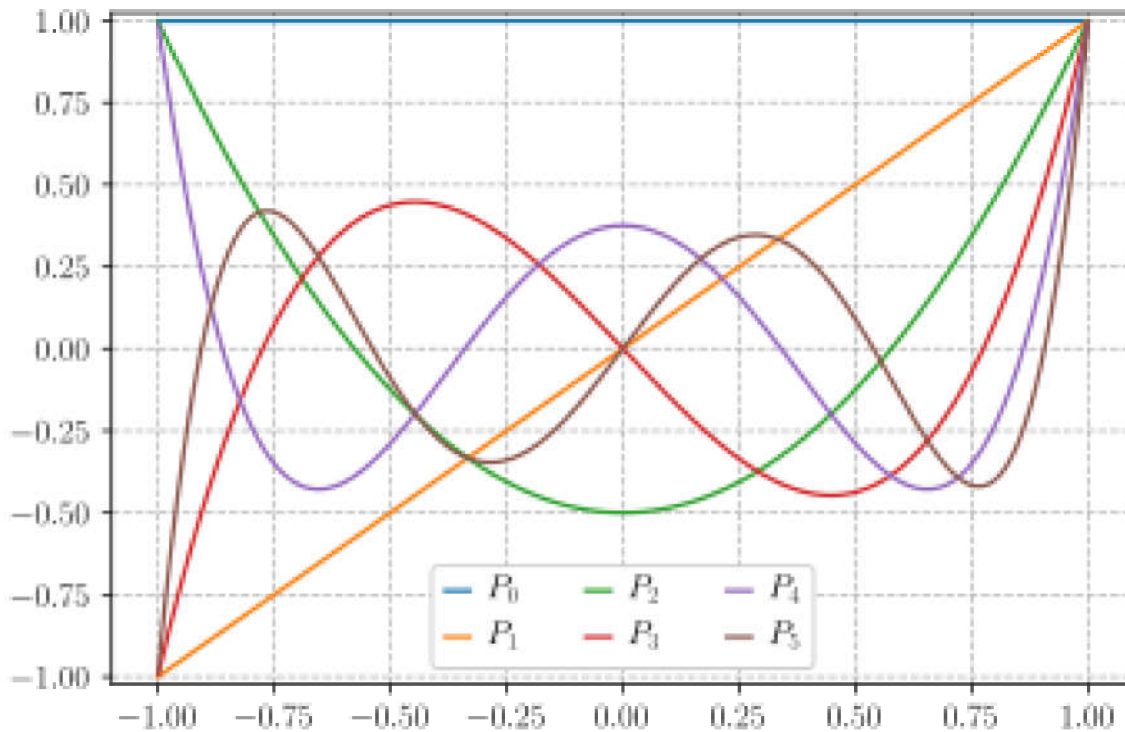
Hermitovi $\quad (-\infty, \infty) \quad p(x) = e^{-x^2}$

$$H_{n+1}(x) = 2x H_n(x) - 2n H_{n-1}(x)$$
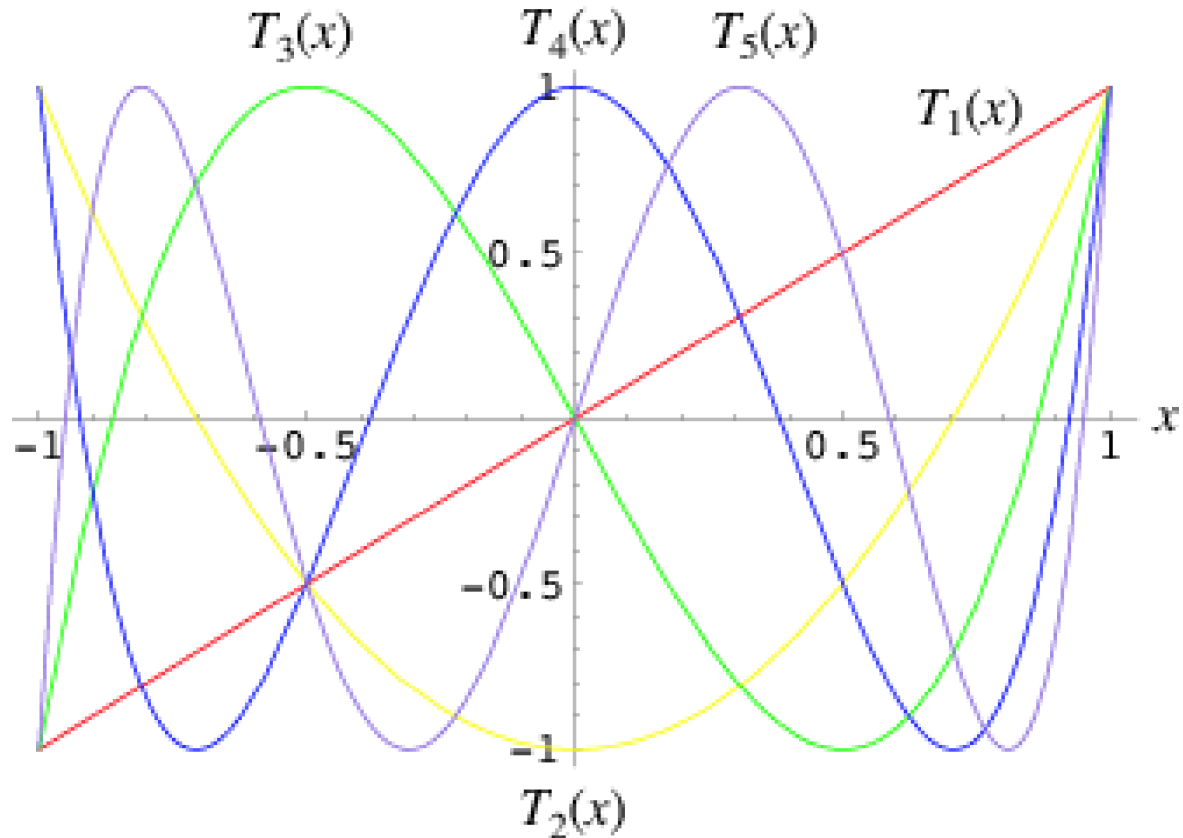
$$H_n''(x) - 2x H_n'(x) + 2n H_n(x) = 0$$

$$H_n(x) = (-1)^n e^{x^2} \frac{d^n}{dx^n} \left[e^{-\frac{x^2}{2}} \right]$$

Ležandrovi polinomi   [-1, 1]   p(x) = 1

n	$P_n(x)$
0	1
1	x
2	$\frac{1}{2}\left(3x^2 - 1\right)$
3	$\frac{1}{2}\left(5x^3 - 3x\right)$
4	$\frac{1}{8}\left(35x^4 - 30x^2 + 3\right)$
5	$\frac{1}{8}\left(63x^5 - 70x^3 + 15x\right)$
6	$\frac{1}{16}\left(231x^6 - 315x^4 + 105x^2 - 5\right)$
7	$\frac{1}{16}\left(429x^7 - 693x^5 + 315x^3 - 35x\right)$
8	$\frac{1}{128}\left(6435x^8 - 12012x^6 + 6930x^4 - 1260x^2 + 35\right)$
9	$\frac{1}{128}\left(12155x^9 - 25740x^7 + 18018x^5 - 4620x^3 + 315x\right)$
10	$\frac{1}{256}\left(46189x^{10} - 109395x^8 + 90090x^6 - 30030x^4 + 3465x^2 - 63\right)$

Čebiševljevi polinomi (prve vrste)   [-1, 1]   p(x) = 1/sqrt(1-x^2)

$$T_0(x) = 1$$
$$T_1(x) = x$$
$$T_2(x) = 2x^2 - 1$$
$$T_3(x) = 4x^3 - 3x$$
$$T_4(x) = 8x^4 - 8x^2 + 1$$
$$T_5(x) = 16x^5 - 20x^3 + 5x$$
$$T_6(x) = 32x^6 - 48x^4 + 18x^2 - 1$$
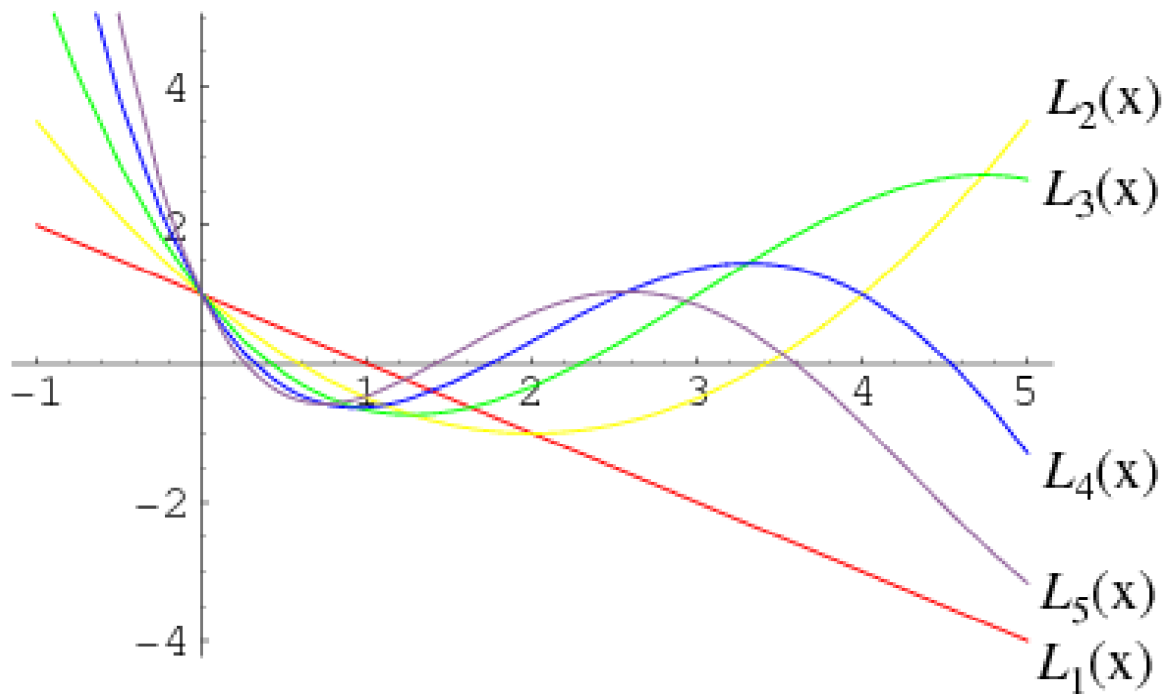$$T_7(x) = 64x^7 - 112x^5 + 56x^3 - 7x$$
$$T_8(x) = 128x^8 - 256x^6 + 160x^4 - 32x^2 + 1$$
$$T_9(x) = 256x^9 - 576x^7 + 432x^5 - 120x^3 + 9x$$
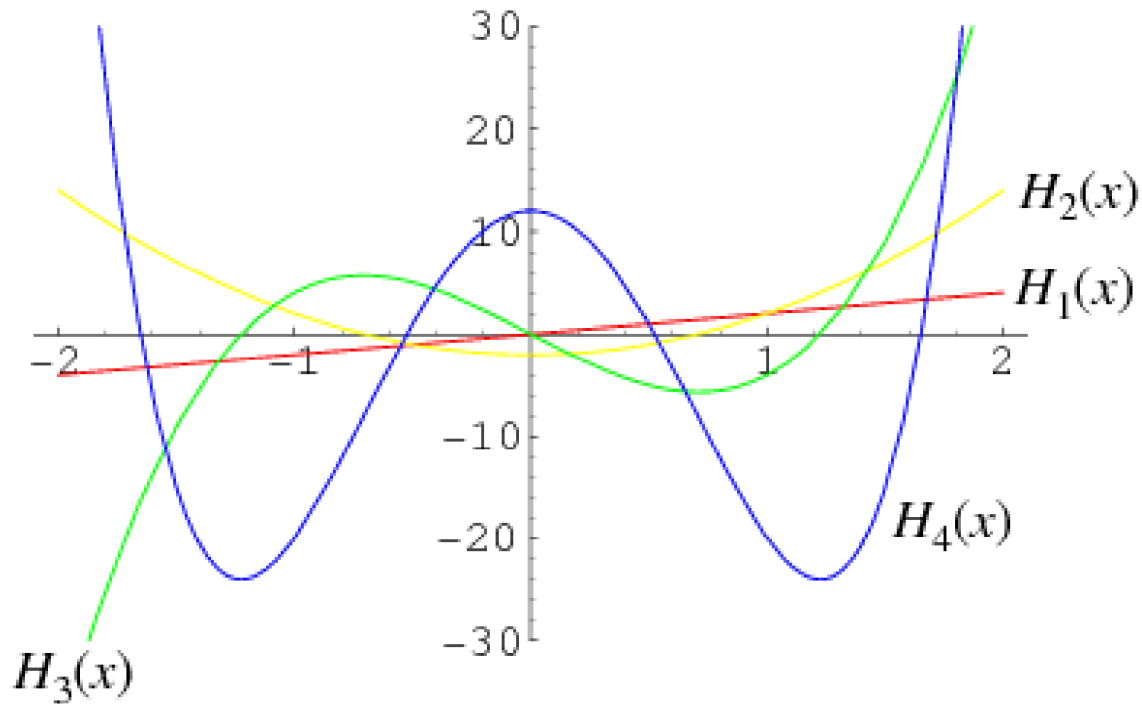$$T_{10}(x) = 512x^{10} - 1280x^8 + 1120x^6 - 400x^4 + 50x^2 - 1$$
$$T_{11}(x) = 1024x^{11} - 2816x^9 + 2816x^7 - 1232x^5 + 220x^3 - 11x$$

Lagerovi polinomi   [0, +inf)   p(x) = exp(-x)

n	$L_n(x)$
0	1
1	$-x + 1$
2	$\frac{1}{2}(x^2 - 4x + 2)$
3	$\frac{1}{6}(-x^3 + 9x^2 - 18x + 6)$
4	$\frac{1}{24}(x^4 - 16x^3 + 72x^2 - 96x + 24)$
5	$\frac{1}{120}(-x^5 + 25x^4 - 200x^3 + 600x^2 - 600x + 120)$
6	$\frac{1}{720}(x^6 - 36x^5 + 450x^4 - 2400x^3 + 5400x^2 - 4320x + 720)$
n	$\frac{1}{n!}((-x)^n + n^2(-x)^{n-1} + \ldots + n(n!)(-x) + n!)$

Hermitovi polinomi   (-inf, +inf)   p(x) = exp(-x^2)

$H_0\ (x) = 1$

$H_1\ (x) = 2\,x$

$H_2\ (x) = 4\,x^2 - 2$

$H_3\ (x) = 8\,x^3 - 12\,x$

$H_4\ (x) = 16\,x^4 - 48\,x^2 + 12$

$H_5\ (x) = 32\,x^5 - 160\,x^3 + 120\,x$

$H_6\ (x) = 64\,x^6 - 480\,x^4 + 720\,x^2 - 120$

$H_7\ (x) = 128\,x^7 - 1344\,x^5 + 3360\,x^3 - 1680\,x$

$H_8\ (x) = 256\,x^8 - 3584\,x^6 + 13\,440\,x^4 - 13\,440\,x^2 + 1680$

$H_9\ (x) = 512\,x^9 - 9216\,x^7 + 48\,384\,x^5 - 80\,640\,x^3 + 30\,240\,x$

$H_{10}\ (x) = 1024\,x^{10} - 23\,040\,x^8 + 161\,280\,x^6 - 403\,200\,x^4 + 302\,400\,x^2 - 30\,240.$