Таблица 1: Must-try functions.

Formula	Output dimension	# of arguments	# of parameters
$\sqrt{x}$	1	1	0
$x\sqrt{x}$	1	1	0
$\arctan x$	1	1	0
$\ln x$	1	1	0
$x \ln x$	1	1	0

Таблица 2: List of elementary functions.

Function name	Formula	Output dimension	# of arguments	# of parameters
Add constant	$x + w$	1	1	1
Quadratic	$w_2x^2 + w_1x + w_0$	1	1	3
Cubic	$w_3x^3 + w_2x^2 + w_1x + w_0$	1	1	4
Logarithmic sigmoid	$1/(w_0 + \exp(-w_1x))$	1	1	2
Exponent	$\exp x$	1	1	0
Normal	$\frac{1}{w_1\sqrt{2\pi}} \exp\left(\frac{(x-w_2)^2}{2w_1^2}\right)$	1	1	2
Multiply by constant	$x \cdot w$	1	1	1
Monomial	$w_1x^{w_2}$	1	1	2
Weibull-2	$w_1w_2x^{w_2-1} \exp -w_1x^{w_2}$	1	1	2
Weibull-3	$w_1w_2x^{w_2-1} \exp -w_1(x - w_3)^{w_2}$	1	1	3

Таблица 3: Monotone functions.

By growth rate					
Function name	Formula	Output dimension	# of arguments	# of parameters	Constraints
Linear	$w_1 x + w_0$	1	1	2	
Exponential rate	$\exp(w_1 x + w_0)$	1	1	2	$w_1 > 0$
Polynomial rate	$\exp(w_1 \ln x + w_0)$	1	1	2	$w_1 > 1$
Sublinear polynomial rate	$\exp(w_1 \ln x + w_0)$	1	1	2	$0 < w_1 < 1$
Logarithmic rate	$w_1 \ln x + w_0$	1	1	2	$w_1 > 0$
Slow convergence	$w_0 + w_1/x$	1	1	2	$w_1 \neq 0$
Fast convergence	$w_0 + w_1 \cdot \exp(-x)$	1	1	2	$w_1 \neq 0$
Other					
Soft ReLu	$\ln(1 + e^x)$	1	1	0	
Sigmoid	$1/(w_0 + \exp(-w_1 x))$	1	1	2	$w_1 > 0$
Nonparametric log-sigmoid	$1/(1 + \exp(-x))$	1	1	0	
Hiberbolic tangent	$\tanh(x)$	1	1	0	
softsign	$\frac{\lvert x \rvert}{1+\lvert x \rvert}$	1	1	0	

Таблица 4: Multivariate.

Bivariate				
Plus	$x_1 + x_2$	1	2	0
Minus	$x_1 - x_2$	1	2	0
Product	$x_1 \cdot x_2$	1	2	0
Division	$\frac{x_1}{x_2}$	1	2	0
	$x_1\sqrt{x_2}$	1	2	0
	$x_1 \ln x_2$	1	2	0
Multivariate				
Sum of products	$\sum_{i,\,j} x_i x_j$	1	$n \geq 2$	0
Sum of products	$\sum_{i,\,j,\,k} x_i x_j x_k$	1	$n \geq 3$	0
Sum of Gaussians	$\sum_{j=1}^{n} a_j \exp(-\frac{(x_j - b_j)^2}{c_j})$	1	n	$3n$
Polynomial	$\sum_{j=0}^{n} a_j x^j$	1	1	n
Rational polynomial	$\frac{\sum_{j=0}^{n} a_j x^j}{x^m + \sum_{j=0}^{m-1} b_j x^j}$	1	1	$n + m + 1$

Таблица 5: Data statistics.

sum	$\sum_i x_i$	1	m	0
mean	$(\sum_i x_i)/m$	1	m	0
min	$\min_i x_i$	1	m	0
max	$\max_i x_i$	1	m	0
std	$\frac{1}{m-1}\sqrt{\sum_i (x_i - \text{mean}(x))^2}$	1	m	0
hist	$\sum_i [X_{j-1} < x_i \leq X_j]$	n	m	$n - 1$
conv	$\sum_j x_{i-j} w_j$	1	$m - n + 1$	$n \leq m$
FFT coefficients		n	m	1