

Function		Search space	Global Min	Properties
Ackley	$f(x) = -20 \exp \left( -0.2 \sqrt{\frac{1}{d} \sum_{i=1}^d x_i^2} \right) - \exp \left( \frac{1}{d} \sum_{i=1}^d \cos(2\pi x_i) \right) + 20 + \exp(1)$	[-32.768, 32768] for all $x_i$	f(x)=0, where $((x_1, x_2, \dots, x_d) = (0,0, \dots 0)$	Numerous local, one global, multimodal, continuous, differentiable, non-separable, scalable
Griewank	$f(x) = \sum_{i=1}^d \frac{x_i^2}{4000} - \prod_{i=1}^d \cos \left( \frac{x_i}{\sqrt{i}} \right) + 1$	[-600, 600] for all $x_i$	f(x)=0, where $((x_1, x_2, \dots, x_d) = (0,0, \dots 0)$	Many local, one global, multimodal, continuous, differentiable, non-separable, scalable
Schwefel	$f(x) = 418.9829d - \sum_{i=1}^d x_i \sin(\sqrt{ x_i })$	[-500, 500] for all $x_i$	f(x)=0, where $((x_1, x_2, \dots, x_d) = (420.9687, 420.9687, \dots, 420.9687)$	Many local, one global, multimodal, continuous, differentiable, separable, scalable
Rastrigin	$f(x) = 10d + \sum_{i=1}^d [x_i^2 - 10 \cos(2\pi x_i)]$	[-5.12, 5.12] for all $x_i$	f(x)=0, where $((x_1, x_2, \dots, x_d) = (0,0, \dots 0)$	Many local, one global, multimodal
Sphere	$f(x) = \sum_{i=1}^d x_i^2$	[-5.12, 5.12] for all $x_i$	f(x)=0, where $((x_1, x_2, \dots, x_d) = (0,0, \dots 0)$	d local minima, one global, continuous, convex, unimodal
Perm	$f(x) = \sum_{i=1}^d \left( \sum_{j=1}^d (j+10) \left( x_j^i - \frac{1}{j^i} \right) \right)^2$	[-d, d] for all $x_i$	f(x)=0, where $((x_1, x_2, \dots, x_d) = \left(1, \frac{1}{2}, \dots, \frac{1}{d}\right)$	
Zakharov	$f(x) = \sum_{i=1}^d x_i^2 + \left( \sum_{i=1}^d 0.5 i x_i \right)^2 + \left( \sum_{i=1}^d 0.5 i x_i \right)^4$	[-5, 10] for all $x_i$	f(x)=0, where $((x_1, x_2, \dots, x_d) = (0,0, \dots 0)$	No local minima, one global, continuous
Rosenbrock	$f(x) = \sum_{i=1}^{d-1} [100(x_{i+1} - x_i^2)^2 + (x_i - 1)^2]$	[-2048, 2048], for all $x_i$	f(x)=0, where $((x_1, x_2, \dots, x_d) = (1,1, \dots 1)$	Continuous, Differentiable, Non-Separable, Scalable, Unimodal
Dixon-Price	$f(x) = (x_1 - 2)^2 + \sum_{i=2}^d i (2x_i^2 - x_{i-1})^2$	[-10,10] for all $x_i$	f(x)=0 where $x_i = 2^{\frac{2^i-2}{2^i}}$	Valley-Shaped

Detaylı bilgiler ve örnek kodlar için: <https://www.sfu.ca/~ssurjano/optimization.html>  
[https://en.wikipedia.org/wiki/Test\\_functions\\_for\\_optimization](https://en.wikipedia.org/wiki/Test_functions_for_optimization),  
[http://yapbenzet.kocaeli.edu.tr/wp-content/uploads/benchmark\\_fonksiyonlar.pdf](http://yapbenzet.kocaeli.edu.tr/wp-content/uploads/benchmark_fonksiyonlar.pdf)