

1. Funkcja Ackley'a

$$f(\mathbf{x}) = -a \exp \left( -b \sqrt{\frac{1}{d} \sum_{i=1}^d x_i^2} \right) - \exp \left( \frac{1}{d} \sum_{i=1}^d \cos(cx_i) \right) + a + \exp(1)$$

2. Funkcja Griewank'a

$$f(\mathbf{x}) = \sum_{i=1}^d \frac{x_i^2}{4000} - \prod_{i=1}^d \cos \left( \frac{x_i}{\sqrt{i}} \right) + 1$$

3. Funkcja Beale'a

$$f(\mathbf{x}) = (1.5 - x_1 + x_1 x_2)^2 + (2.25 - x_1 + x_1 x_2^2)^2 + (2.625 - x_1 + x_1 x_2^3)^2$$