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## TEST FUNCTIONS

FOR UNCONSTRAINED GLOBAL OPTIMIZATION

### Rosenbrock Function

r Number of variables:  $n$  variables.

r Definition:

$$f(\mathbf{x}) = \sum_{i=1}^{n-1} \left[ 100(x_i^2 - x_{i+1})^2 + (x_i - 1)^2 \right].$$

r Search domain:  $-5 \leq x_i \leq 10, i = 1, 2, \dots, n$ .

r Number of local minima: several local minima.

r The global minima:  $\mathbf{x}^* = (1, \dots, 1), f(\mathbf{x}^*) = 0$ .

r MATLAB Code: [download rosen.m](#)

r Function graph: for  $n = 2$ .



