STOCHASTIC-GRADIENT-DESCENT($\Theta_{init}, \eta, f, \nabla_\Theta f_1, \ldots, \nabla_\Theta f_n, T$)

1 $\Theta^{(0)} = \Theta_{init}$
2 **for** $t = 1$ **to** T
3 randomly select $i \in \{1, 2, \ldots, n\}$
4 $\Theta^{(t)} = \Theta^{(t-1)} - \eta(t)\, \nabla_\Theta f_i(\Theta^{(t-1)})$
5 **return** $\Theta^{(t)}$