procedure SGA($f : \mathbb{X} \mapsto \mathbb{R}^+$, ps, cr) ▷ **for maximization!**

for $j \in 1 \ldots ps$ **do** ▷ random initial population
randomly sample $S_0[j].x$ from $\mathbb{X}$; $S_0[j].y \leftarrow f(S_0[j].x)$;

for $i \in 0 \ldots \infty$ **do** ▷ iterate "generations"
for $j \in 1 \ldots ps$ **do** ▷ new pop. via mutation and crossover
if $\mathfrak{R}_0^1 < cr$ **then** $N_i[j].x \leftarrow \texttt{binary}(S_i[\lfloor \mathfrak{R}_1^{ps} \rfloor].x, S_i[\lfloor \mathfrak{R}_1^{ps} \rfloor].x)$;
else $N_i[j].x \leftarrow \texttt{move}(S_i[\lfloor \mathfrak{R}_1^{ps} \rfloor].x)$;