$$
\begin{aligned}
k &= \text{random} \in [1, q) \\
r &= (g^k \bmod p) \bmod q \\
s &= k^{-1}\,(H(M) + xr) \bmod q \\
Sign(x, k, M) &= \langle r, s \rangle \\
Verify(y, r, s) &: \\
w &= s^{-1} \bmod q \\
u_1 &= H(M) \cdot w \bmod q \\
u_2 &= r \cdot w \bmod q \\
v &= ((g^{u_1} y^{u_2}) \bmod p) \bmod q \\
\text{valid if } v &= r
\end{aligned}
$$