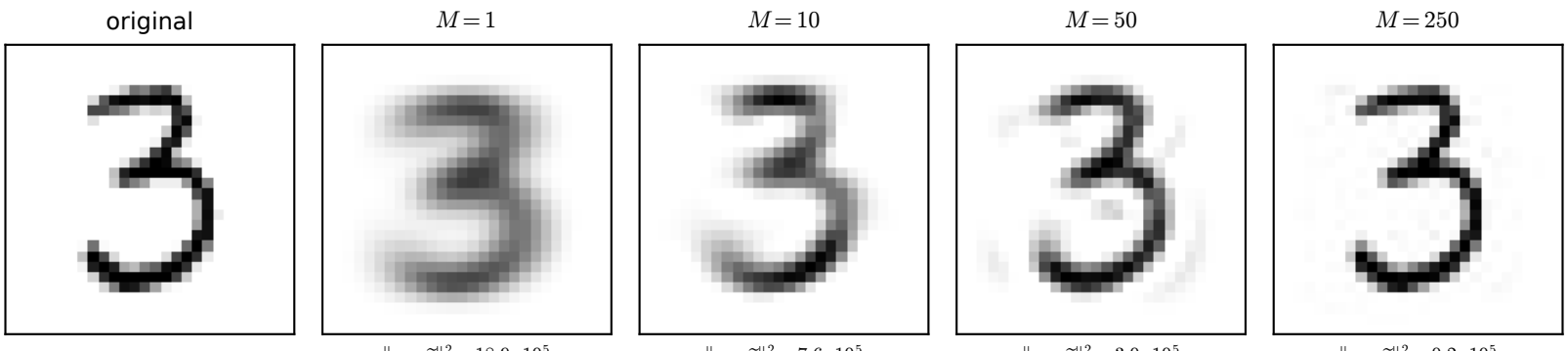

original
$M = 1$
$M = 10$
$M = 50$
$M = 250$
$\|\mathbf{x} - \tilde{\mathbf{x}}\|^2 = 18.9 \cdot 10^5$
$\|\mathbf{x} - \tilde{\mathbf{x}}\|^2 = 7.6 \cdot 10^5$
$\|\mathbf{x} - \tilde{\mathbf{x}}\|^2 = 3.0 \cdot 10^5$
$\|\mathbf{x} - \tilde{\mathbf{x}}\|^2 = 0.2 \cdot 10^5$