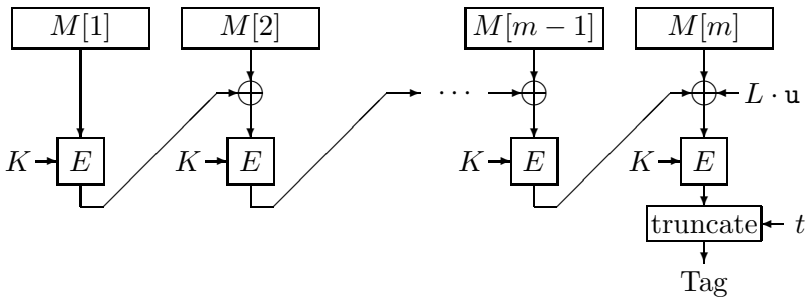
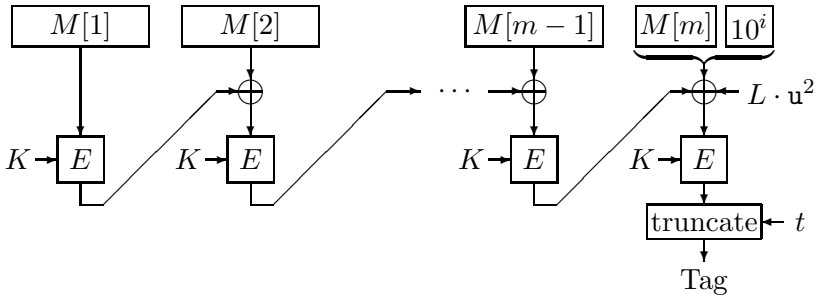


Case $|M| = mn$ for some $m \geq 1$. In this case, $M = M[1], M[2], \ldots, M[m]$ and $|M[m]| = n$.



Otherwise. In this case, $M = M[1], M[2], \ldots, M[m]$ and $|M[m]| < n$.