1. process for each digit. $O(\log W)$.
2. in $O(\log^{\epsilon} W)$ time we can preprocess the reverse of $O(\log \log W)$ bits and query in $O(1)$. $O(\frac{\log W}{\log \log W})$.

note. for binary integer, reverse integer can be solved in $O(\log \log W)$ time by divide and conquer. otherwise we may need number base conversion.
after preprocessing in $O(W^{\epsilon})$, we can reverse integer in $O(1)$.
in general, for binary integer we can shuffle the bits in $O(\log \log W)$ time [1, Sec. 7.1.3]. we also have a matching $\Omega(\log \log W)$ lower bound if multiplication is not allowed.

References

[1] Donald E Knuth. *The art of computer programming, volume 4A: combinatorial algorithms, part 1.* Pearson Education India, 2011.