q-Factorial

[Award] **8 pts**

[Category] **Math**

For n a positive integer, the q-factorial is defined by



Let *S*(*n*, *q*) = [*n*]*q*!. You are given S(5, 2) = 9765, S(100, 7) mod 1000000000039 = 850054509459.

Find S(123456789876, 7) mod 1000000000039.

[Answer] **562794167278**