

Test cases to perform:

1. All inputs valid: arg\_a, arg\_b, arg\_a\_parity, arg\_b\_parity.
2. Valid inputs: arg\_a, arg\_b. Invalid all parity inputs: arg\_a\_parity, arg\_b\_parity.
3. Valid inputs: arg\_a, arg\_b, arg\_a\_parity. Invalid one parity input: arg\_b\_parity.
4. Valid inputs: arg\_a, arg\_b, arg\_b\_parity. Invalid one parity input: arg\_a\_parity.
5. Check multiplication for maximal and minimal input values.