Wentao Lu

1. Assume there have prime number $P_1, P_2 \cdots, P_n$

and $L = P_1 P_2 \cdots P_n + 1$

· L must be divisible by some prime

so it must be one of prime number from $P_1 \cdots P_n$

But $P_k \mid P_1 \cdots P_n$ so $(L - P_1 \cdots P_n) = 1$

it is contradiction

so L ~~is not absolutely~~ isn't the largest prime

so there have infinity prime number

2. 1 2 3 5 7 11 13 17 19 23 29 31 37 41

43 47 73 79 83 89 97 101 103 107 109

113 127 131 137 139

3. $3 \mid 3003$

$11 \mid 1001$

$7 \mid 91$

13

$3003 = 3 \cdot 7 \cdot 11 \cdot 13$

4.