1.36

Compute the value of

2(p−1)/2 (mod p)

for every prime 3 ≤ p<20. Make a conjecture as to the possible values of 2(p−1)/2 (mod p) when p is prime and prove that your conjecture is correct.

Ans:

My conjecture is for the prime number 3, 5, 7 the possible value is 2 ,4 ,1 respectively and tit will be repeat showing it.

The program proves my conjecture.

The value of prime number 3 is: 2

The value of prime number 5 is: 4

The value of prime number 7 is: 1

The value of prime number 9 is: 2

The value of prime number 11 is: 4

The value of prime number 13 is: 1

The value of prime number 15 is: 2

The value of prime number 17 is: 4

The value of prime number 19 is: 1