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# Twins

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by [shuf\\_2318](#)

Problem

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Submitted 11 hours ago • Score: 19.68

Status: **Accepted**

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✓	Test Case #27				

## Submitted Code

Language: Python 2

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```
1 # Enter your code here. Read input from STDIN. Print output to STDOUT
2
3 import math
4 #from itertools import *
5 import itertools
6
7
8 def _try_composite(a, d, n, s):
9     if pow(a, d, n) == 1:
```

```

9     if pow(a, u, n) == 1:
10         return False
11     for i in range(s):
12         if pow(a, 2**i * d, n) == n-1:
13             return False
14     return True # n is definitely composite
15
16 def is_prime(n, _precision_for_huge_n=16):
17     if n in _known_primes or n in (0, 1):
18         return True
19     if any((n % p) == 0 for p in _known_primes):
20         return False
21     d, s = n - 1, 0
22     while not d % 2:
23         d, s = d >> 1, s + 1
24     # Returns exact according to http://primes.utm.edu/prove/prove2_3.html
25     if n < 1373653:
26         return not any(_try_composite(a, d, n, s) for a in (2, 3))
27     if n < 25326001:
28         return not any(_try_composite(a, d, n, s) for a in (2, 3, 5))
29     if n < 118670087467:
30         if n == 3215031751:
31             return False
32         return not any(_try_composite(a, d, n, s) for a in (2, 3, 5, 7))
33     if n < 2152302898747:
34         return not any(_try_composite(a, d, n, s) for a in (2, 3, 5, 7, 11))
35     if n < 3474749660383:
36         return not any(_try_composite(a, d, n, s) for a in (2, 3, 5, 7, 11, 13))
37     if n < 341550071728321:
38         return not any(_try_composite(a, d, n, s) for a in (2, 3, 5, 7, 11, 13, 17))
39     # otherwise
40     return not any(_try_composite(a, d, n, s)
41                     for a in _known_primes[:_precision_for_huge_n])
42
43 _known_primes = [2, 3]
44 _known_primes += [x for x in range(5, 1000, 2) if is_prime(x)]
45
46 #print is_prime(31, _precision_for_huge_n=16)
47
48 a,b = raw_input().strip().split(' ')
49 n = int(a)
50 m = int(b)
51
52 if n==1: n+=1
53
54 ans = 0
55 for i in range(n,m+1):
56     if i + 2 <= m:
57         if is_prime(i) and is_prime(i+2):
58             ans+=1
59             #print i , " " , (i+2)
60 print ans
61

```



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