

$$i = 6k + 1$$

$$10007 = 6k + 1$$

$$8000 = 6k$$

$$2000 = 6k$$

$$k = \frac{10007 - 1}{6}$$

$$i = 1$$

$$6$$

$$\begin{array}{c} 0 \quad 1 \\ \hline \end{array} \quad \begin{array}{c} 2 \quad 3 \\ \hline \end{array}$$

even no  
multiples of 3 no  
so 4, 6, 8, 10  
etc are dealt  
with 5 left

Re. All primes  $> 3$  is in the form

$$6k \pm 1 \text{ for any } \forall k, k \in \mathbb{Z}$$

$$\begin{array}{c} 6 \\ - / \quad + \\ 17 \quad 19 \end{array} \quad \begin{array}{c} 12 \\ - / \quad + \\ 11 \quad 13 \end{array} \quad \begin{array}{c} 18 \\ - / \quad + \\ 17 \quad 19 \end{array} \quad \begin{array}{c} 24 \\ - / \quad + \\ 23 \quad 25 \end{array}$$

$$\begin{array}{c} 30 \\ - / \quad + \\ 29 \quad 31 \end{array}$$

Doesn't work for  
big numbers

kinda useless

let  $i = 6$

while  $i - 1 \leq \sqrt{n}$

if  $n \bmod (i - 1) == 0$  or  $n \bmod (i + 1) == 0$   
 $\rightarrow$  False

$i += 6$

Return true