

* Smallest Value After Replacing with Sum of Prime Factors

$$15 \rightarrow 3 \times 5 \Rightarrow 5+3=8 \rightarrow 2 \times 2 \times 2 \Rightarrow 2+2+2=6 \rightarrow 2 \times 3 \Rightarrow$$

$$2+3=5 \rightarrow 1 \times 5 \Rightarrow 5+1=6$$

X

$$20 \rightarrow 2 \times 2 \times 5 \Rightarrow 2+2+5=9 \rightarrow 3 \times 3 \Rightarrow 3+3=6 \rightarrow 2 \times 3 \Rightarrow 2+3=5 \Rightarrow$$

$$5 \times 1 \Rightarrow 5+1=6$$

X

check from 2 to \sqrt{n} for divisibility. Obviously # dividing is a prime since we start from 2. when $n \leq \text{sum}()$ terminate.