

1) Mobius function $\mu(n)$ for $1 \leq n \leq 20$

$[1, -1, -1, 0, -1, 1, -1, 0, 0, 1, -1, 0, -1, 1, 1, 0, -1, 0, -1, 0]$

Mertens function $M(n) = \sum_{c=1}^n \mu(c)$ for $1 \leq n \leq 20$

$[1, 0, -1, -1, -2, -1, -2, -2, -2, -1, -2, -2, -3, -2, -1, -1, -2, -2, -3, -3]$

2) $2+2=4$	$5+13=18$
$3+3=6$	$3+17=20$
$3+5=8$	$3+19=22$
$3+7=10$	$5+19=24$
$5+7=12$	$3+23=26$
$3+11=14$	$5+23=28$
$3+13=16$	$7+23=30$

3) $(3, 5)$ $(17, 19)$
 $(5, 7)$
 $(11, 13)$

4) $n=2 \rightarrow [2, 1]$
 $n=3 \rightarrow [3, 5, 8, 4, 1]$
 $n=4 \rightarrow [4, 2, 1]$
 $n=5 \rightarrow [5, 8, 4, 2, 1]$
 $n=6 \rightarrow [6, 3, 5, 8, 4, 2, 1]$
 $n=7 \rightarrow [7, 11, 17, 26, 13, 20, 10, 5, 8, 4, 2, 1]$
 $n=8 \rightarrow [8, 4, 2, 1]$
 $n=9 \rightarrow [9, 14, 7, 11, 17, 26, 13, 20, 10, 5, 8, 4, 2, 1]$
 $n=10 \rightarrow [10, 5, 8, 4, 2, 1]$
 $n=11 \rightarrow [11, 17, 26, 13, 20, 10, 5, 8, 4, 2, 1]$
 $n=12 \rightarrow [12, 6, 3, 5, 8, 4, 2, 1]$

$$n=13 \rightarrow [13, 20, 10, 5, 8, 4, 2, 1]$$

$$n=14 \rightarrow [14, 7, 11, 17, 26, 13, 20, 10, 5, 8, 4, 2, 1]$$

$$n=15 \rightarrow [15, 23, 35, 53, 80, 40, 20, 10, 5, 8, 4, 2, 1]$$

$$n=16 \rightarrow [16, 8, 4, 2, 1]$$

$$n=17 \rightarrow [17, 26, 13, 20, 10, 5, 8, 4, 2, 1]$$

$$n=18 \rightarrow [18, 9, 14, 7, 11, 17, 26, 13, 20, 10, 5, 8, 4, 2, 1]$$

$$n=19 \rightarrow [19, 26, 44, 22, 11, 17, 26, 13, 20, 10, 5, 8, 4, 2, 1]$$

$$n=20 \rightarrow [20, 10, 5, 8, 4, 2, 1]$$