$$\text{If } F(n) \; = \; \sum_{d|n} \mu(d)$$

F(n) = 1 when n=1

= 0 when n>1

Proof:

We know $\mu(d)$ is a multiplicative function so $\sum_{d|n} \mu(d)$ is also a multiplicative function.

If n >1,

N = p^e1 * p^e2 * p^e3 …………..... p^ek.

So, F(n) $= \sum_{d|p^{e1}} \mu(p^{e1})$

$= \mu(1) + \mu(p) + \mu(p^2) + \mu(p^3) + ... + \mu(p^k)$

= 1 + -1 + 0 + 0 + …………… + 0

= 0

So, F(n) = 0 when n>1.