Parity cheatsheet

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n $n \in \mathbb{N}$
a,b even integers
c,d odd integers
I set of even integers
K set of odd integers
f any function
g,h even functions; satisfying $\big(f(x) = f(-x)\big)$
o,p odd functions; satisfying $\big(f(x) \neq f(-x)\big)$
M set of even functions
N set of odd functions

0.1 Addition, Subtraction

$$even \pm even = even$$
$$even \pm odd = odd$$
$$odd \pm odd = even$$

0.2 Multiplication

$$even \times even = even$$
$$odd \times odd = odd$$

0.3 Facts

- $O(x) = 0$ is the only function $\in M, N$.
- $(O \neq g \wedge O \neq h) : (g + h) \notin \Big\{M, N\Big\}$
- $(g + h) \in M$
- $(g \cdot n) \in M$
- $(o + p) \in N$
- $(o \cdot n) \in N$
- $(g \cdot h) \in M$
- $(o \cdot p) \in M$
- $\frac{g}{h} \in M$
- $\frac{o}{p} \in M$
- $\frac{g}{o} \in N$
- $g' \in N$
- $o' \in M$
- $(g \circ h) \in M$
- $(o \circ p) \in N$
- $(g \circ o) \in M$
- $(f \circ g) \in M$
- $\int_{-A}^{+A} o = 0$
- $\int_{-A}^{+A} g = 2 \cdot \int_{0}^{+A} g$