

group

abelian group

linear space

inner product space

1. vector addition closure
2. identity $\mathbf{0}$
3. inverse
4. associativity

4 + 1. commutativity

1. scalar multiplication closure
2. identity 1
3. associativity
4. scalar distributivity
5. vector distributivity

~~inner product $\langle \cdot | \cdot \rangle$~~ 1. $\langle f | g + h \rangle = \langle f | g \rangle + \langle f | h \rangle$