

I have a question in the text book written by Weinberg, In page 232, (page 316 in the Japanese translation version), there is a following description.

The spin representations, for which $A+B$ is half an odd integer, can similarly be constructed from the direct product of these tensor representations and the Dirac representation $(\frac{1}{2}, 0) \oplus (0, \frac{1}{2})$. For instance, taking the direct product of the vector $(\frac{1}{2}, \frac{1}{2})$ representation and the Dirac $(\frac{1}{2}, 0) \oplus (0, \frac{1}{2})$ representation gives a spinor-vector Ψ^μ , that transforms according to the reducible representation

$$(\frac{1}{2}, \frac{1}{2}) \otimes [(\frac{1}{2}, 0) \oplus (0, \frac{1}{2})] = (\frac{1}{2}, 1) \oplus (\frac{1}{2}, 0) \oplus (1, \frac{1}{2}) \oplus (0, \frac{1}{2}).$$

There are not definitions of \oplus and \otimes in the text book, so I can't understand above equation. If you know the definitions, let me know. If you don't know, please ask members of your laboratory.