

24. (a) The combination ddu has a total charge of $(-\frac{1}{3} - \frac{1}{3} + \frac{2}{3}) = 0$, and a total strangeness of zero. From Table 45-3, we find it to be a neutron (n).
- (b) For the combination uus, we have $Q = +\frac{2}{3} + \frac{2}{3} - \frac{1}{3} = 1$ and $S = 0 + 0 - 1 = -1$. This is the Σ^+ particle.
- (c) For the quark composition ssd, we have $Q = -\frac{1}{3} - \frac{1}{3} - \frac{1}{3} = -1$ and $S = -1 - 1 + 0 = -2$. This is a Ξ^- .