

tec 5. A nuclear physicist wants to check the conservation of energy in a certain nuclear reaction and measures the initial and final energies to be $E_i = 130 \pm 4 \text{ MeV}$ and $E_f = 145 \pm 8 \text{ MeV}$, respectively, where both uncertainties are the standard deviations of the answers. Is this discrepancy significant (at the 5% level)? Explain clearly.