Thermochemical equations: Solve each question for q. Also, state weather the reaction is endothermic or exothermic.

1) How much heat will be absorbed then 13.7g of nitrogen reacts with excess O2 according to the following equation?

N2 + O2 🡪 2NO + 180kJ

2) How much heat will be transferred when 14.9g of ammonia reacts with excess O2 according to the following equation?

4NH3 + 5O2 🡪 4NO + 6H2O -1770kJ

3) How much heat will be transferred when 5.81g of graphite reacts with excess H2 according to the following equation?

6C (graphite) + 3H2 🡪 C6H6 + 49.03kJ