

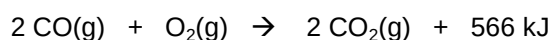
Name: _____
Hour: _____ Date: _____

Chemistry: *Energy and Stoichiometry*

Directions: Solve each of the following problems. Show your work, including proper units, to earn full credit.

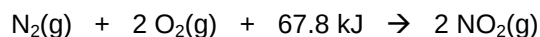
1. The combustion of propane (C_3H_8) produces 248 kJ of energy per mole of propane burned. How much heat energy will be released when 1 000 dm^3 of propane are burned at STP?

2. Carbon monoxide burns in air to produce carbon dioxide according to the following balanced equation:



How many grams of carbon monoxide are needed to yield 185 kJ of energy?

3. Nitrogen gas combines with oxygen gas according to the following balanced equation:



Assuming that you have excess nitrogen, how much heat energy must be added to 540 g of oxygen in order to use up all of that oxygen?

4. Ethyl alcohol burns according to the following balanced equation:



How many molecules of water are produced if 5 000 kJ of heat energy are released?

Answers: 1. 11 071 kJ 2. 18.3 g CO 3. 572 kJ 4. 6.62×10^{24} molecules H_2O