

ME410
Fall 2003
Homework - Day 10

You are given gasoline, a hydrocarbon with the chemical formula C_8H_{15} , which is to be burned in an engine with dry air. Two separate fuel air equivalence ratios will be used: lean mixture $\phi = 0.9$ and rich mixture $\phi = 1.2$.

Calculate, using EES, the composition of the exhaust. For each equivalence ratio, give your answer in terms of:

1. mole of exhaust product / mole of O_2 .
2. mole of exhaust product / mole of air.
3. kg of exhaust product / kg of air.

Please check the answers to 2 and 3 using the Colorado State combustion applet. A model for starting your EES file is on the class website and may be borrowed.

Due September 29, 2003.