Problem Set 7 – 1-page answer key

4.22 -3,535,765 J per mole n-pentane.

4.28 $798,480 per day.

4.71 DIPPR is the "Design Institute for Physical Properties," and was created by the AIChE in 1978 to cull thermodynamic data from worldwide citations. Variations in description allowed.

Answers must match DIPPR database. Cadets must use DIPPR database. Database is linked to the course web page.

4.83 The CHEMCAD Gibbs Reactor gives a calculated value of -4.0573 MJ per hour. Since the flow rates are specified in mol per hour, this is equivalent to -4.0573 MJ per 6 moles of CH3OH. This is very close to the value of 4.0589 MJ per 6 moles of CH3OH obtained in Problem 4.20.

4.45 38,896.1 J per mole of C_4H_8.

4.55 (a) -825.09645 kJ/mol natural gas feed; (b) -533.952 kJ per mol natural gas feed.

4.6 By-hand or Mathematica derivation must show match between two results.