

### Homework-3

#### Q1

Plot vapor pressure of pentane as a function of temperature from 60° to 200° F. Plot log vapor pressure versus  $1/T$  over the same temperature range.

#### Q2

The heat of vaporization of ether (MW = 46) is 88.4 calories per gram at its normal boiling point (34.5° C). Calculate the vapor pressure at 60° C. At what temperature is the vapor pressure equal to 280 mm?

#### Q3

The vapor pressure of a pure hydrocarbon is 6.36 psia at -75° F. If the heat of vaporization is 8450 Btu per pound-mole, what is the vapor pressure at 40° F?

#### Q4

A hydrocarbon has the following vapor pressures

Temperature	Vapor Pressure
-75° F	6.36 psia
-50° F	12.60 psia
-25° F	22.70 psia

Calculate graphically by plotting logarithm of the vapor pressure versus  $1/T$ ;  
(a) Vapor pressure at 40° F. ; (b) Boiling point at one standard atmosphere pressure; (c) The gage storage pressure required to prevent loss by evaporation at 0° F.