# Thermodynamics 1 DEN107

**Problem Set 09 (due week 11, Mon 2012mar19)**

**Insert the SEMS homework coverpage as 1st page; this question sheet with original signatures as the 2nd page; then attach your solutions in subsequent pages. Your solutions are due before 3.30 pm on Monday March 19th 2012 in the cabinet outside the SEMS office.**

By signing below I certify that I will not obtain the teaching assistant's (TA) signature for students other than myself, and that I will not forge the TA's signature on this page. Violators will be prosecuted in accordance to QMUL procedures. Please fill in the five items below.

| | |
|---|---|
| Student Surname: | |
| Student Forenames: | |
| Student ID (9 digits): | |
| Student signature: | |
| TA confirms tutorial attendance (signature): | |

50% of the assignment grade will be deducted if the TA signature above is missing

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**Problem 1**
Do example 6 page 116 for isentropic turbine efficiency $\eta_{t,is}$ =0.83.

**Problem 2**
Do example 8 page 120 for pump outlet height at station 3 set at 25 m above ground.

**Problem 3**
Do example 9 page 120 for the case where: $p_{o,2}/p_{o,1} = 4$; $p_{o,4}/p_{o,3} = 4$; and $p_{o,5} = p_{o,6} = 16 \times p_{o,1}$

**Problem 4**
Do example 3 page 136 for pump inlet (and condenser) temperature 45 °C and turbine inlet temperature 640 °C