ECE370 POWER & ENERGY SYSTEMS
Hints & Answers for HW # 5

For the next 2 problems use: $K_a = \frac{Np}{\pi a}$ N = # of turns = 0.5 x # of conductors

a = # of parallel paths = p for LAP winding
= 2 for WAVE winding

5.1 Between 57 & 58 V

5.2 Between 30 & 32 mWb

5.3 (a) 890.5 Nm (c) 86.3% (e) 8593 rpm (h) 17.7%

5.4 (a) 1187 Nm (c) 88.8% (e) 3125 rpm (g) 65.2%

5.5 (a) 2422 Nm (c) 88.1% (e) 221⅓ A (h) 85.9%

5.6 (a) (ii) 90.5% (b) P_D = 49.22 kW (P_{out} is asked for)