Homework #2

Deadline: May 23th, 2018

As seen from the figure, the system consists of a narrow V belt-pulley and spur gear mechanism.
Electric motor's power is 22 kW, speed is n_1=1445 rpm (when looking at from right side, electric motor rotates clockwise.) Diameters of pulleys, d_1=355 mm and d_2=900 mm. z_1=18, gear width is 100 mm and n_3=125 rpm. Efficiency of gears and belt-pulley mechanism is 0,98. a=350 mm, b= 300 mm.

a) Dimension the gear mechanism.
b) Dimension the belt-pulley mechanism
c) Select the proper bearings for output shaft

K_f=3, K_d=1, S=2, $K_ç$ =1,5, K_ε=1,25

Gear materials	Fe60	C45	Ck45	C15
σ_D (N/mm^2)	210	200	270	230