Tutorial # 2

1- The spur gears shown figure 2-1 have a module of 12 mm and a pressure angle of 20°. The pinion ***2*** rotates at 1800 rev/min cw and transmits 150kW through the idler part to gear ***5*** on shaft ***c***. The number of teeth for gears ***2***, ***3***, ***4*** and **5** are 18T, 32T, 18T and 48T respectively. What forces and torques do gear ***3*** and ***4*** transmit to the idler shaft?

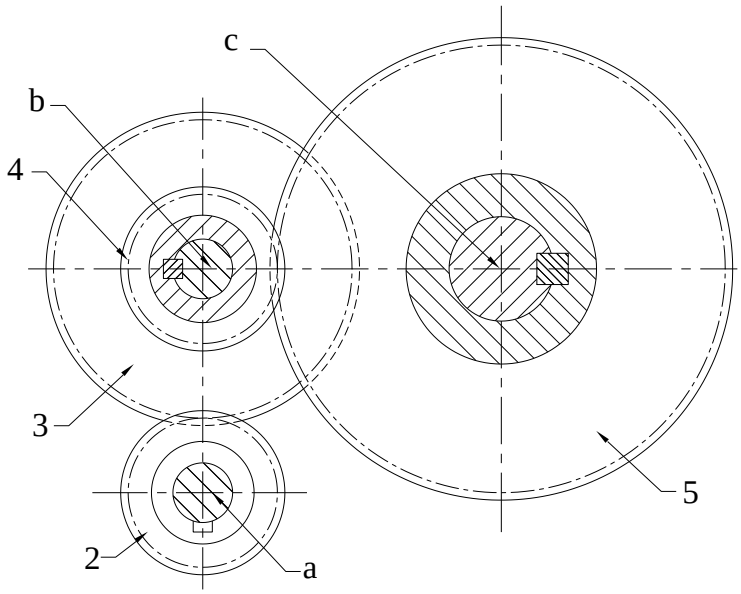

Figure 2-1

2- A 20° spur pinion with 20 teeth and a module of 2.5 mm transmits 120 W to a 36 tooth gear. The pinion speed is 100 rev/min, and the gears are grade 1, 18 mm face width, through-hardened steel at 200 Brinell, uncrowned, manufactured to a No.6 quality standard, and considered to be of open gearing quality installation. Find the contact ratio for this gear set analytically and graphically.