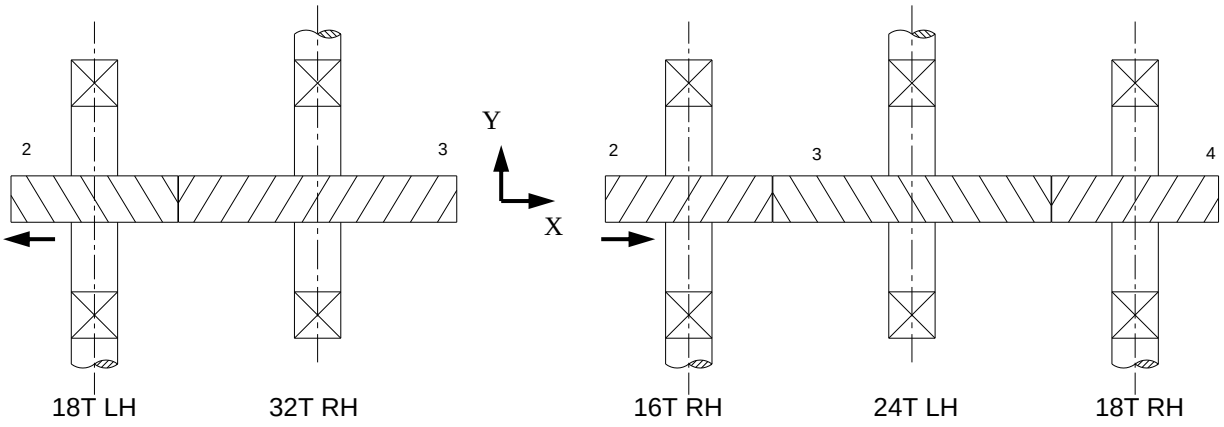
Tutorial # 5

1- The gears in the two trains shown below have a normal module of 6 mm, a normal pressure angle of 20° and a 30° helix angle. For both gear trains the transmitted load is 3500 N.
a) Find the forces acting on each gear in part a if the pinion is rotating in the clockwise direction about the y-axis.
b) For part b find the forces acting on gear 3. The pinion rotates ccw and gear 3 is an idler gear.



2- A gear train is composed of four helical gears with the three axes in a single plane, as shown in the figure. The gears have a normal pressure angle of 20° and 30° helix angle. Shaft b is an idler and the transmitted load acting on gear 3 is 2250 N. The gears on shaft b have 14 and 54 teeth with a normal module of 3 mm. Find the forces and moments exerted by gears 3 and 4 on shaft b.