Tutorial # 6: Gear 1

Q1. Find the module of a pair of gears having 32 and 84 teeth, respectively, whose centre distance is 87 mm.

Q2. Two involute spur gears each of module 3 mm, having 18 and 26 teeth respectively operate at a pressure angle of 20°. Find out the maximum addendum for the gears so that no intereference occurs. Assume the addendum for the gears to be equal.
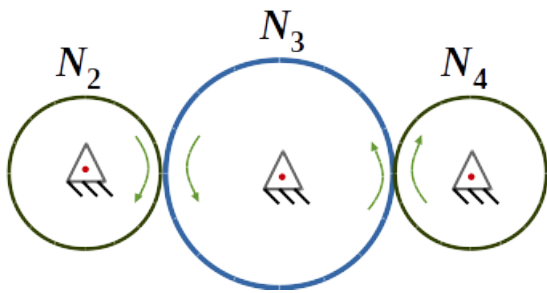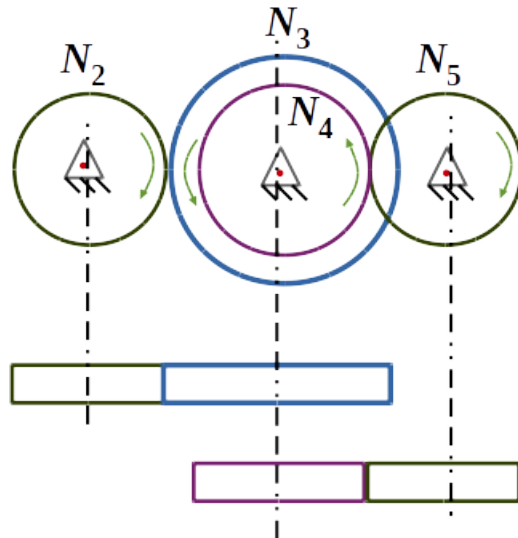

Figure 1

Figure 2

Q3. **Simple Gear Train**: Each shaft carries only one gear. Compute the speed ratio (also referred to as *velocity ratio/Ist order kinematic coefficient*) for the gear train shown in Figure 1.

Q4. **Compound Gear Train**: At least one shaft carries more than one gear. Compute the speed ratio (also referred to as *velocity ratio/Ist order kinematic coefficient*) for the gear train shown in Figure 2.
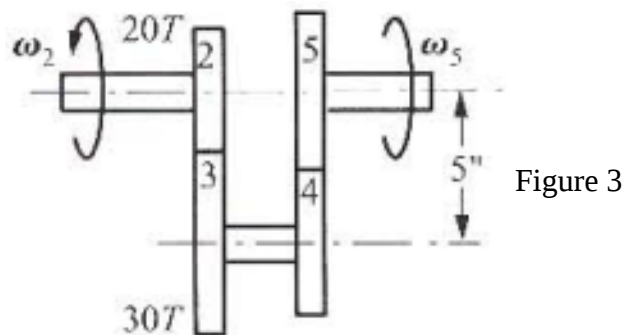

Figure 3

Q5. A gear reducer is to be designed as shown in Figure 3. Determine the module and number of teeth on gears 4 and 5 if the speed of gear 2 is to be 10 times the speed of gear 5. No gear should have fewer than 15 teeth.