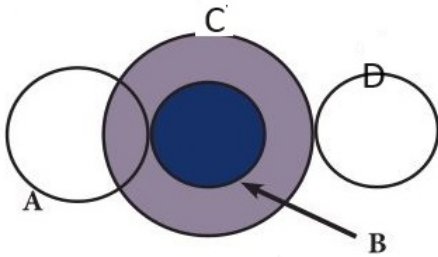


Name: Rayan Bullard

For the system of gears pictured, when gear A = 38 teeth, gear B = 18 teeth, gear C = 84 teeth, and gear D = 18 teeth, and the input torque is 70 N-m, what is the output torque (precision of 0.01)?



$$\frac{\omega_B}{\omega_A} = \frac{18}{38} = \frac{9}{19}$$

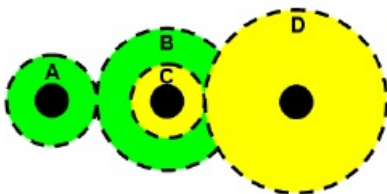
$$\frac{\omega_D}{\omega_C} = \frac{18}{84} = \frac{3}{14}$$

$$\frac{9}{19} \cdot \frac{3}{14} = \frac{27}{266}$$

$$\frac{27}{266} \cdot \frac{t}{70} \rightarrow 266t = 1890$$

$$t = 7.12$$

For the system of gears pictured, when gear A = 24 teeth, gear B = 80 teeth, gear C = 10 teeth, and gear D = 54 teeth, and the input torque is 80 N-m, what is the output torque (precision of 0.01)?



$$\frac{\omega_B}{\omega_A} = \frac{80}{24} = \frac{10}{3}$$

$$\frac{\omega_D}{\omega_C} = \frac{54}{10} = \frac{27}{5}$$

$$\frac{10}{3} \cdot \frac{27}{5} = \frac{270}{15} = \frac{18}{1} = 18$$

$$\frac{18}{1} \cdot \frac{t}{80}$$

$$t = 1440$$

Write ONLY answers below this line \_\_\_\_\_

GRSSet12

a: 7.12

b: 1440.00