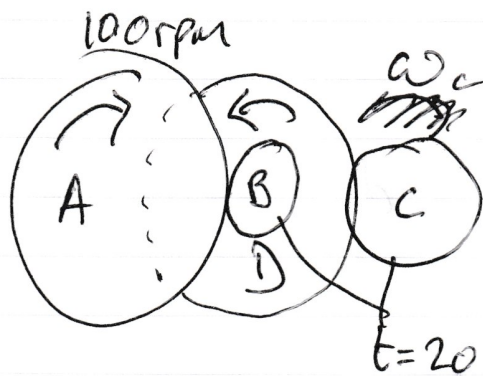


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$$\begin{aligned} A &= 80 \\ B &= 20 \\ C &= 20 \\ D &= 60 \end{aligned}$$

$$\text{Ratio} = G_{AB} \times G_{DC}$$

$$\begin{aligned} G &= \frac{t_B}{t_A} \times \frac{t_C}{t_D} = \frac{20}{80} \times \frac{20}{60} \\ &= 0.25 \times 0.3 \\ &= 0.075 \\ &= \underline{\underline{12:1}} \end{aligned}$$

Speed of gear C

$$\omega_A = 100 \text{ rpm}$$

$$G = \frac{\omega_A}{\omega_B} \times \frac{\omega_B}{\omega_C} \times \frac{\omega_C}{\omega_D} = \frac{\omega_A}{\omega_C}$$

$$\omega_C = \frac{\omega_A}{G} = \frac{100}{0.075} = 1200 \text{ rpm}$$