GEAR RATIO PROBLEMS

1. A gear system consists of a driver gear with 40 teeth and a driven gear with 80 teeth.

- What is the gear ratio of this system?

- Is the output speed higher or lower than the input speed?

2. In a gear system, the driver gear has 20 teeth, and the gear ratio is 4:1. How many teeth does the driven gear have?

3. In a gear train, if the driver gear is larger than the driven gear:

- How will the angular speed of the driven gear compare to that of the driver gear?

- What happens to the torque transmitted to the driven gear?

4. The driver gear in a system has a diameter of 6 cm, and the driven gear has a diameter of 12 cm.

- What is the gear ratio?

- How does this affect the rotational speed of the driven gear compared to the driver gear?

5. In a gear train, the driver gear provides high torque but rotates slowly. The driven gear rotates faster.

- Which gear likely has more teeth, the driver or the driven gear?

- Why is torque reduced in the driven gear when its speed increases?