



QUIZ 4

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No: _____

Problem: The two shafts are made of A-36 steel. Each has a diameter of 30 mm and they are connected using the gears fixed to their ends. Their other ends are attached to fixed supports at A and B. They are also supported by journal bearings at C and D, which allow free rotation of the shafts along their axes. If a torque of 800 N.m is applied to the gear at E as shown,

- a) Determine the reactions at A and B.
- b) Determine the rotation of the gear at E.

Given: $G_{st} = 75 \text{ GPa}$

