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**Mechanical Design 1**

**Class Section 01**

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# **Problem 1**

图示

描述已自动生成

**Solution:**

For this question, we are asked to determine whether or not the assumed loading of figure yields a factor of safety any different from that of figure . Use the maximum-shear-stress theory. Repeat the analysis using the distortion-energy theory.

Maximum-shear-stress theory:

For figure :

Therefore, .

For figure :

Therefore, the assumed loading of figure yields a factor of safety not different from that of figure using the maximum-shear-stress theory.

Distortion-energy theory:

For figure :

For figure :

Therefore, the assumed loading of figure yields a factor of safety different from that of figure using the distortion-energy theory.

# **Problem 2**

图示

描述已自动生成

**Solution:**

For this question, we are asked to determine the minimum preferred size diameter using the distortion-energy theory and maximum-shear-stress theory.

Distortion-energy theory:

Maximum-shear-stress theory: