

ET332a
Series Motor Homework
Linear Operation

A 440 V 50 HP series motor draws 100 A at a speed of 1000 rpm operating at rated power output. The total resistance of the armature circuit including the brushes is 0.11 ohms. The series field resistance is 0.09 ohms. Assuming a linear magnetization curve, calculate the torque and speed of the motor when the motor operates at 50% of rated torque