Given: $R_{BAT} = 0.06 \text{ Ohms}, R_m=0.06 \text{ ohms}$. Neglect motor inductance, assume static case. (Motor is stalled).

1. If $V_{DS} = 0.0 \text{ V}$, what is motor current? What is power dissipated in motor? What is battery voltage? What is power supplied by battery?

2. If MOSFET gate is driven such that $V_{DS} = 2.4 \text{ V}$, what is the motor current? What is the power dissipated in the motor? What is power dissipated in the MOSFET?

3. If $V_{GS} = 5.5 \text{ V}$, what is $I_{DS}$? What is $V_{DS}$? (Hint: loadline). What is power dissipated in motor? What is power dissipated in MOSFET?

4. Repeat 2, but now $V_{GS} = 20 \text{ V}$.