Consider an N-channel MOSFET with the following parameters:

- Equivalent oxide thickness: 1.0 nm (assume dielectric constant of SiO$_2$, 4.0)
- Electron mobility: $\mu_n = 250$ cm$^2$/V-s
- MOSFET width: $W = 1.0$ $\mu$m
- Channel length: $L = 20$ nm
- $V_{GS} = V_{DD} = 1.2$ V
- $V_T = 0.3$ V

1) What is the channel resistance in Ohms?