

## 1 Derivative of Fermi-Dirac function

**Derivative of Fermi-Dirac function** Show that the magnitude of the slope of the Fermi-Dirac function  $f$  evaluated at the Fermi level  $\varepsilon = \mu$  is inversely proportional to its temperature. This means that at lower temperatures the Fermi-Dirac function becomes dramatically steeper.