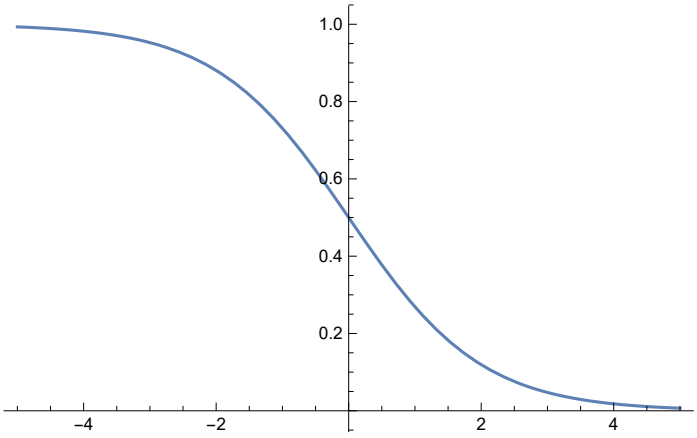
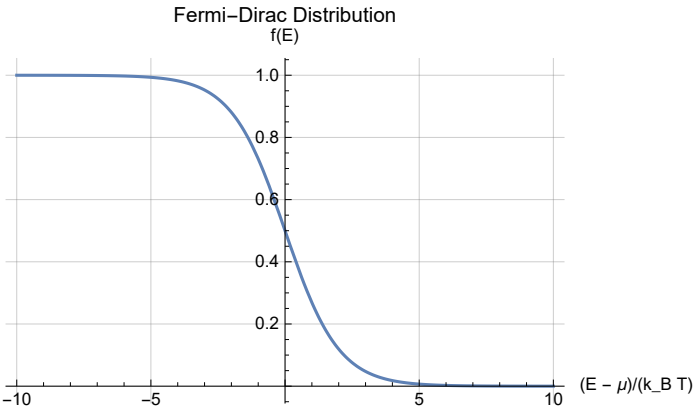
In[1]:=
```
F[x_] := 1 / (1 + Exp[x]);
Plot[F[x], {x, -5, 5}]
```

Out[2]=

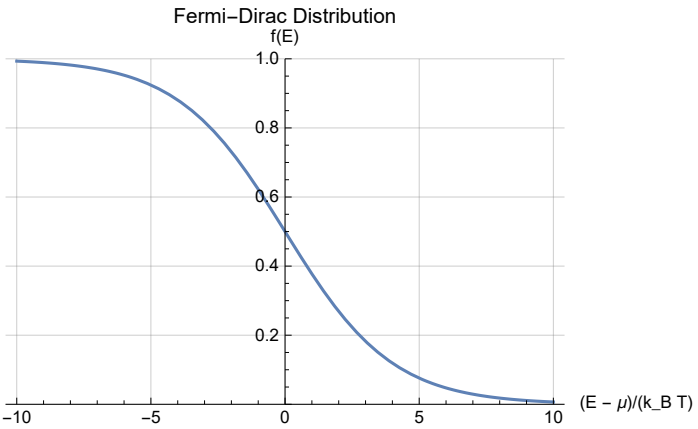


In[3]:=
```
Plot[1 / (1 + Exp[x]), {x, -10, 10}, AxesLabel → {"(E - μ) / (k_B T)", "f(E)"},
 PlotLabel → "Fermi-Dirac Distribution", GridLines → Automatic]
Plot[1 / (1 + Exp[x / 2]), {x, -10, 10}, PlotRange → {0, 1},
 AxesLabel → {"(E - μ) / (k_B T)", "f(E)"},
 PlotLabel → "Fermi-Dirac Distribution", GridLines → Automatic]
Plot[(1 / (1 + Exp[x])) - (1 / (1 + Exp[x / 2])), {x, -10, 10},
 AxesLabel → {"(E - μ) / (k_B T)", "f(E)"}, PlotLabel → "f1-f2", GridLines → Automatic]
```

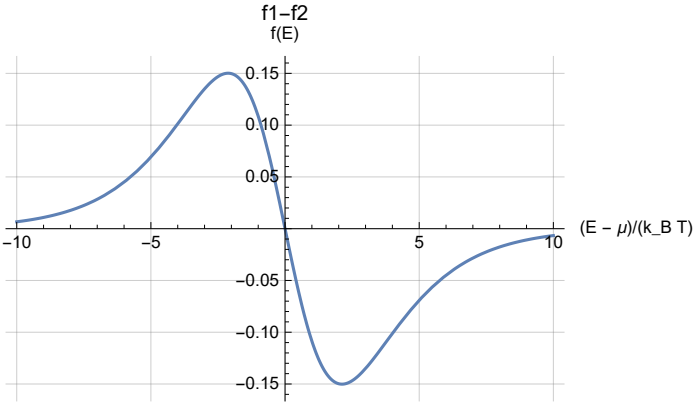
Out[3]=



Out[4]=

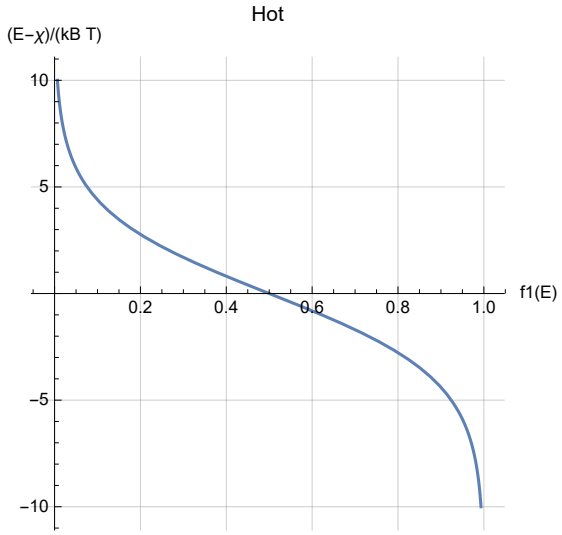


Out[5]=

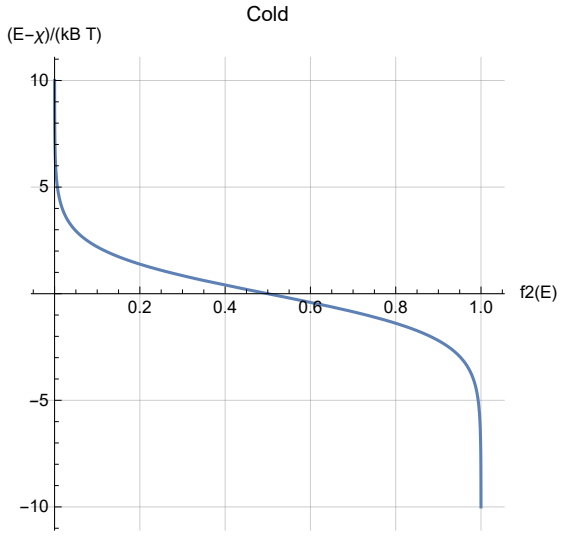


In[22]:=
```
ParametricPlot[{1 / (1 + Exp[x / 2]), x}, {x, -10, 10}, AspectRatio → 1,
 AxesLabel → {"f1(E)", "(E-χ) / (kB T)"}, PlotLabel → "Hot", GridLines → Automatic]
ParametricPlot[{1 / (1 + Exp[x]), x}, {x, -10, 10}, AspectRatio → 1,
 AxesLabel → {"f2(E)", "(E-χ) / (kB T)"}, PlotLabel → "Cold", GridLines → Automatic]
ParametricPlot[{(1 / (1 + Exp[x / 2])) - (1 / (1 + Exp[x])), x}, {x, -10, 10},
 AspectRatio → 1, AxesLabel → {"f1(E)-f2(E)", "(E-χ) / (kB T)"}, GridLines → Automatic]
```

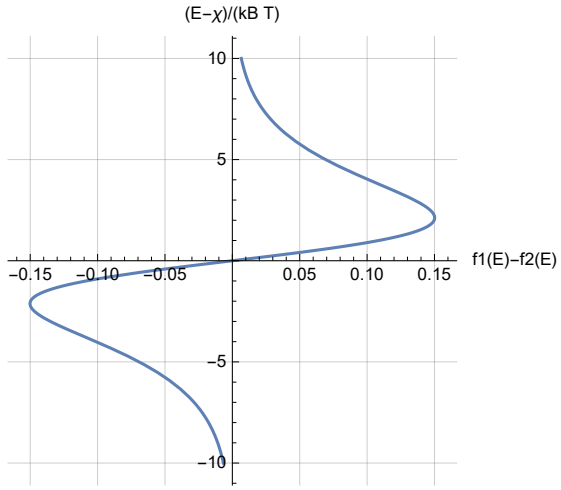
Out[22]=



Out[23]=



Out[24]=



In[9]:=