Ps1. p5 part 7 (g).

comparative force: 1μF capacitor with 1V charge

In[120]:=
```
ClearAll[volt, farad, meter, cm, micron, hbar, c]
volt = Quantity[1, "volts"];
farad = Quantity[ 1, "Farads"];
meter = Quantity[1, "meters"];
cm = 10^(-2) meter;
micron = Quantity[10^(-6), "meters"];
hbar = WolframAlpha[
   "reduced Planck constant SI units", {{"Result", 1}, "QuantityData"}];
c = WolframAlpha["convert speed of light to m/s", {{"Result", 1}, "QuantityData"}];
```

In[152]:=
```
ClearAll[ fCasimir, fCapacitor]
fCasimir[a_, area_] := UnitConvert[ -Pi^2 hbar c area / (1440 a^4), "Newtons"]
fCapacitor[a_, capacitance_, volts_] :=
 UnitConvert[ capacitance * volts^2 / a, "Newtons"]

casimirValue = fCasimir[1 micron, (1 cm)^2]
capValue = fCapacitor[1 micron, 10^(-6) farad, 1 volt]
capValue / casimirValue
```

Out[155]= -2.16781×10^{-8} N

Out[156]= 1 N

Out[157]= -4.61295×10^{7}