```
mm = 1;
μm = 10^-3;
n1 = 1.52; (*refractive index of the objective. guessed. common glass is 1.52*)
n2; (*refractive index of the immersion medium*)
W = 8 mm; (*working distance of the objective in mm*)
```

$$\Delta f[y\_, n2\_] := y \sqrt{\left(\frac{n2}{n1}\right)^2 \left(1 + \frac{W^2}{y^2}\right) - 1} - \frac{n2}{n1} W$$ (*shift of the focal point in mm*)

```
(*plot of Δf*)
Plot[ {Δf[y, 1.0], Δf[y, 1.33], Δf[y, 1.51]},
 {y, 0, 8.45}, PlotRange → {{0, 8.45}, {-5.7, 0}} ]
```