



Magenta circle circumference = $2\pi \times (R-Z)$
 degree/displacement = $360/2\pi \times (R-Z)$
 Linear displacement reduction due to plunge depth = $(R-Z)/R$
 $f(y) = Y \times (R-Z) \times 360/2\pi \times (R-Z) \times R = Y \times 360/2\pi \times (R-Z)^2$