

$$E_{ion} = 15.6 \text{ eV}$$

in H_2 .

Recoil energy is:

$$E_R = E_{TOTAL} - 15.6 \text{ eV}$$

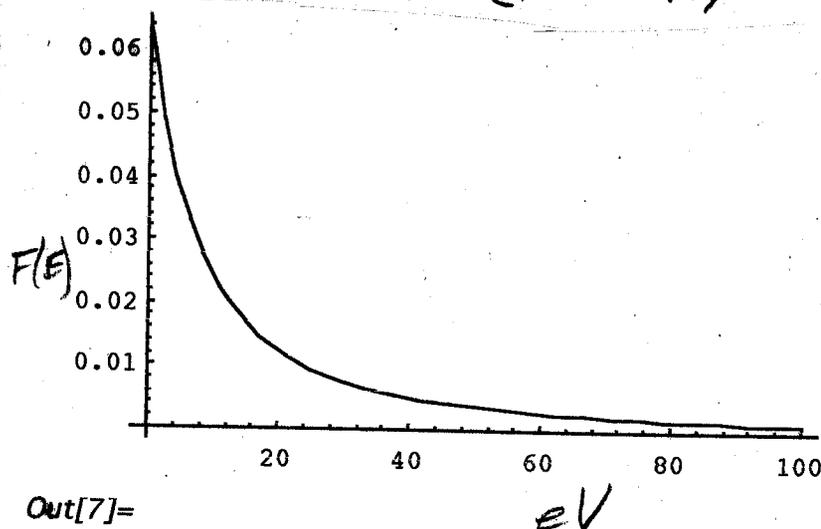
$$F(E)dE = \frac{A}{b_m^2} \frac{dE}{E^2}$$

$$F(E)dE = \frac{A}{b_m^2} \frac{dE}{(15.6 + E_R)^2}$$

$$\frac{A}{b_m^2} = 15.6 \text{ eV}$$

Plot

$$F(E)dE = \frac{15.6}{(15.6 + E_R)^2}$$



Out[7]=
-Graphics-

In[8]:=

NIntegrate[15.6*(1/(15.6+E)^2), {E, 0, 1000}]

Out[8]=

0.98464

TABLE 4.2. AVERAGE ENERGY w TO FORM AN ION PAIR, IN CAREFULLY PURIFIED GASES, BY α RAYS FROM POLONIUM ($E_\alpha = 5.298$ Mev) [As measured by Jesse and Sadauskis (J14). Ionization and excitation potentials from Brown (B132)]

Gas	w , ev/ion pair ± 0.5 per cent	Metastable excitation potential, ev	Lowest ionization potential B_0 , ev	Ratio w/B_0
He	42.7	19.8	24.5	1.74
Ne	36.8	16.6	21.5	1.71
A	26.4	11.6	15.7	1.68
Kr	24.1	9.9	14.0	1.73
Xe	21.9	8.3	12.1	1.81
H_2	36.4	....	15.6	2.33
CO_2	34.5	....	14.4	2.40
Air	35.5	....	
O_2	32.5	....	12.5	2.60
N_2	36.6	....	15.5	2.36
CH_4	29.2	....	14.4	2.03
C_2H_2	27.5	....	11.6	2.37
C_2H_6	26.6	....	
C_2H_4	28.0	....	