By zooming in on my plot of Ai[x], I see that the 1st few zeros are

$x_1 \cong -2.3$

$x_2 \cong -4.1$

$x_3 \cong -5.5$

So $E_1 = 2.3 \left(\frac{m\hbar^2 g^2}{2}\right)^{1/3}$

$E_2 = 4.1 \left(\frac{m\hbar^2 g^2}{2}\right)^{1/3}$

$E_3 = 5.5 \left(\frac{m\hbar^2 g^2}{2}\right)^{1/3}$

Unit check

$\left(kg\ J^2 s^2 \frac{m^2}{s^4}\right)^{1/3} = J$ ✓

G) see mathematica

$$\psi_1 = A\ Ai\left[-2.3 + \underbrace{\overbrace{\left(\frac{2m^2 g}{\hbar^2}\right)^{1/3}}^{k_1^{1/3}} z}_{\equiv z'}\right]$$

The normalization integral is

$$1 = \int_0^\infty \psi_1^2\, dz \qquad \begin{array}{l} z' = k_1^{1/3} z \\ dz' = k_1^{1/3} dz \end{array}$$

$$1 = k_1^{-1/3} \int_0^\infty \psi_1^2\, dz'$$

$$1 = k_1^{-1/3} A^2\, 0.49 \Rightarrow A = 1.4 k_1^{1/6}$$

F $$\langle z \rangle = \int_0^\infty z\, \psi_1^2\, dz = k_1^{-2/3} \underbrace{\int_0^\infty z' \psi_1^2\, dz'}_{\text{mathematica} \to 1.5 A^2}$$

$$= 1.5 \left(\frac{\hbar^2}{2m^2 g}\right)^{1/3}$$ units of length!