3. Line 1:

$$-4.0\times10^{-19} = -2.18\times10^{-18}\,J\left[\frac{1}{2^2} - \frac{1}{n_i^2}\right]$$

$$.1834 = \frac{1}{4} - \frac{1}{n_i^2} \rightarrow \left(-.0665 = -\frac{1}{n_i^2}\right)-1$$

$$\left(.0665 = \frac{1}{n_i^2}\right)^{-\frac{1}{2}} \rightarrow 3.87 \rightarrow \boxed{n_i = 4}$$

Line 2:

$$-3.5\times10^{-19} = -2.18\times10^{-18}\left[\frac{1}{2^2} - \frac{1}{n_i^2}\right]$$

$$.1606 = \frac{1}{4} - \frac{1}{n_i^2} \rightarrow \left(-.08945 = -\frac{1}{n_i^2}\right)-1$$

$$\left(.08945 = \frac{1}{n_i^2}\right)^{-\frac{1}{2}} \rightarrow 3.34 \rightarrow \boxed{n_i = 3}$$

Line 3:

$$-3.0\times10^{-19} = -2.18\times10^{-18}\left[\frac{1}{2^2} - \frac{1}{n_i^2}\right]$$

$$.1376 = \frac{1}{4} - \frac{1}{n_i^2} \rightarrow \left(-.1123 = -\frac{1}{n_i^2}\right)-1$$

$$\left(.1123 = \frac{1}{n_i^2}\right)^{-\frac{1}{2}} \rightarrow 2.98 \rightarrow \boxed{n_i = 3}$$

Line 4:

$$-2.6\times10^{-19} = -2.18\times10^{-18}\left[\frac{1}{2^2} - \frac{1}{n_i^2}\right]$$

$$.1193 = \frac{1}{4} - \frac{1}{n_i^2} \rightarrow \left(-.1307 = -\frac{1}{n_i^2}\right)-1$$

$$\left(.1307 = \frac{1}{n_i^2}\right)^{-\frac{1}{2}} \rightarrow 2.77 \rightarrow \boxed{n_i = 3}$$