$$\frac{C_x - C_0}{C_s - C_0} = 1 - \text{erf}\left(\frac{x}{2\sqrt{Dt}}\right)$$

$$\frac{4.0 \text{ x } 10^{23} \text{ m}^{-3} - 0}{1.0 \text{ x } 10^{25} \text{ m}^{-3} - 0} = 1 - \text{erf}\left(\frac{x}{2\sqrt{Dt}}\right)$$

which reduces to

$$0.9600 = \text{erf}\left(\frac{x}{2\sqrt{Dt}}\right)$$

In order to solve this expression for a value $\frac{x}{2\sqrt{Dt}}$ of it is necessary to interpolate using data in Table 5.1. Thus

z	erf(z)
1.4	0.9523
z	0.9600
1.5	0.9661

$$\frac{z - 1.4}{1.5 - 1.4} = \frac{0.9600 - 0.9523}{0.9661 - 0.9523}$$

From which, z = 1.4558; which is to say

$$1.4558 = \frac{x}{2\sqrt{Dt}}$$

Inasmuch as there are 3600 s/h (= t) and x = 0.2 μm (= 2 x 10^{-7} m) the above equation becomes

$$1.4558 = \frac{2 \text{ x } 10^{-7} \text{ m}}{2\sqrt{(D)(3600 \text{ s})}}$$

which, when solving for the value of D, leads to

$$D = \frac{1}{3600 \text{ s}}\left[\frac{2 \times 10^{-7} \text{ m}}{(2)(1.4558)}\right]^2 = 1.31 \times 10^{-18} \text{ m}^2/\text{s}$$