

7 Input 1

$$n_e = \text{number of elements} = 20$$

$$m = \text{number of nodes per element} = 3$$

$$D = \text{Diffusion Coefficient} = 6 * 10^{-12} \frac{m^2}{s}$$

$$c1 = \text{concentration at left end denoted by } c^* \text{ in the problem} = 30 \frac{kg}{m^3}$$

$$Q_m = \text{mass flow rate at right end denoted by } Q_m^* \text{ in the problem} = 1.2 * 10^{-9} \frac{kg}{m^2 s}$$

$$L = \text{length of the rod} = 1m$$

$$A(x) = \text{area of the rod} = 3 + 4x$$

$$t = \text{tolerance for Gauss Seidel} = 0.001$$