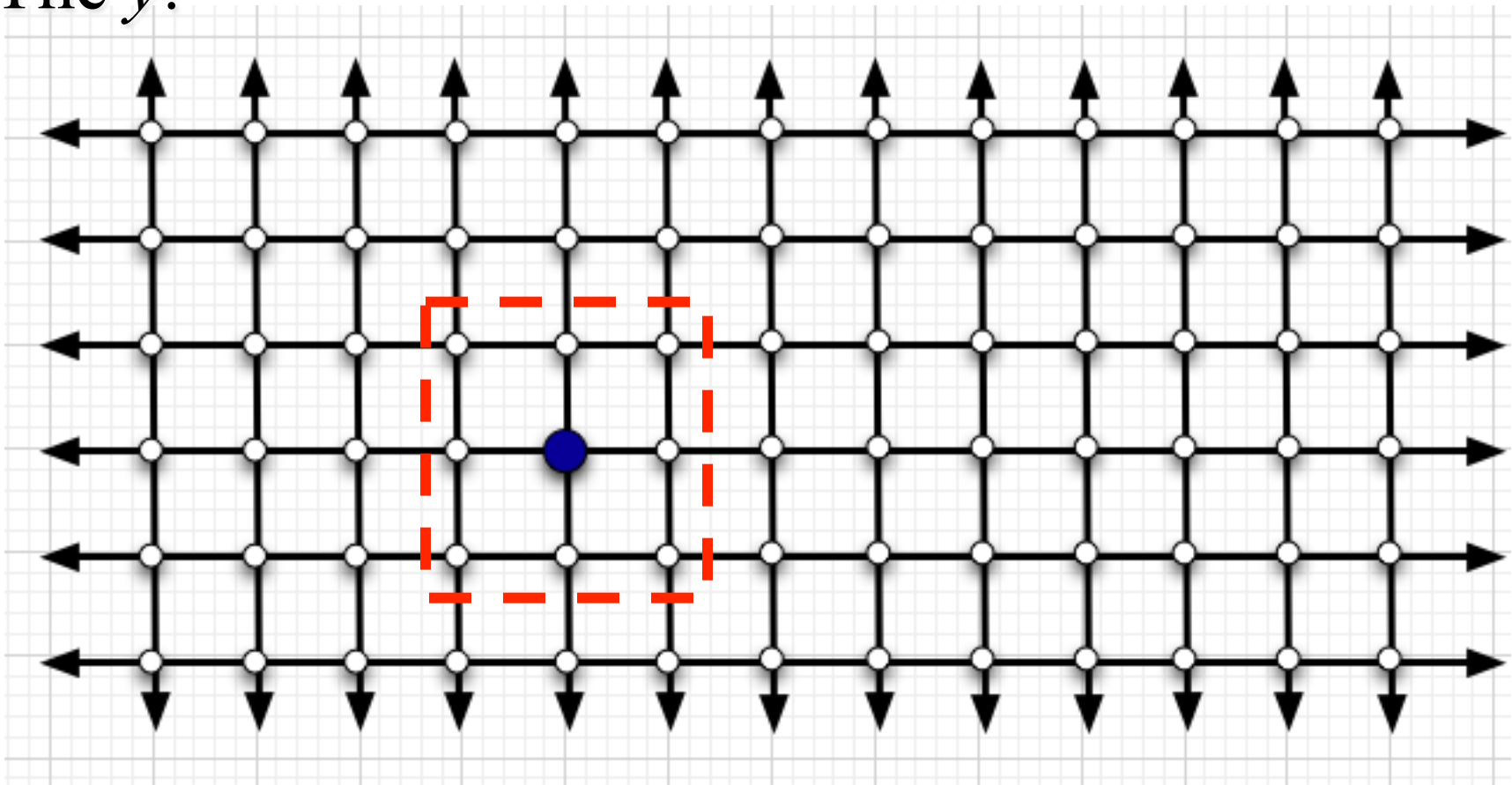
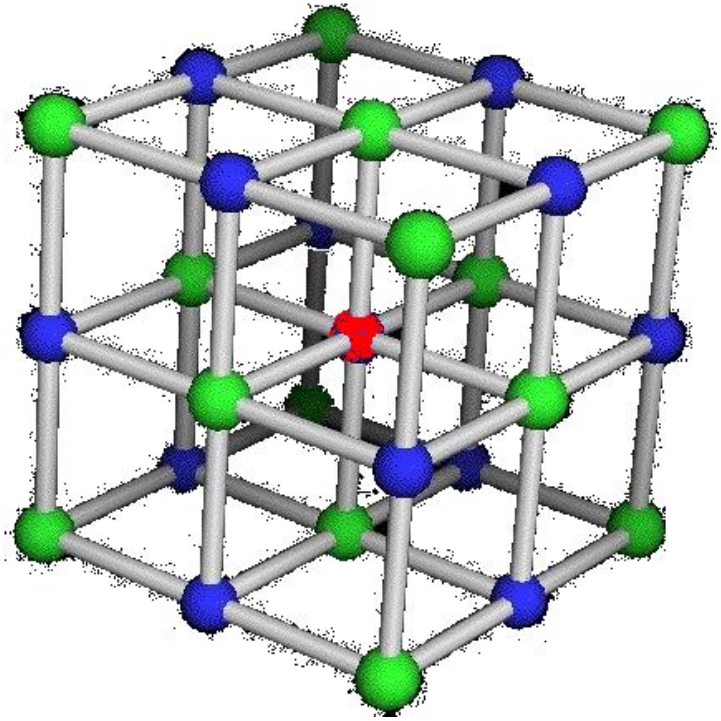
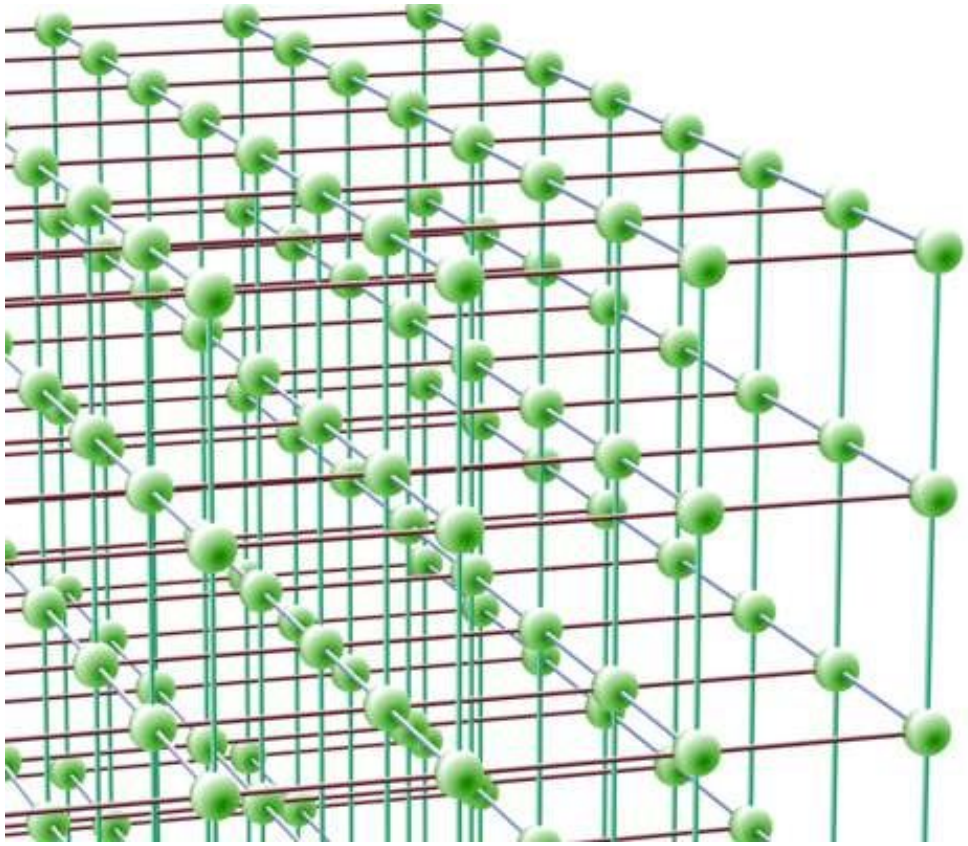
If the probability is equal that, in the next time step, the object moves to any one of the sites in the red box, what is the probability for the *x*-coordinate to change by: +1, 0, or -1?
The *y*?

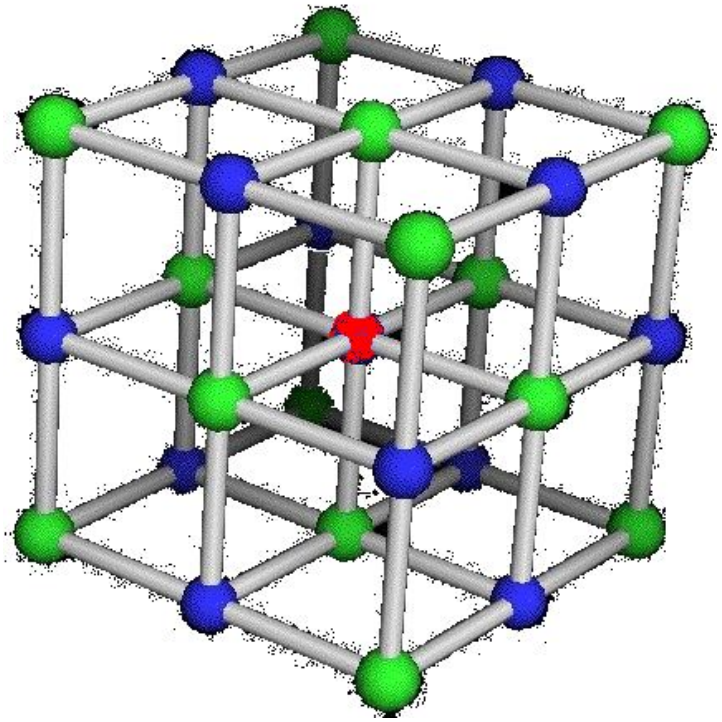


If we use a 3D lattice model, what is the probability to step to each of the neighboring sites?





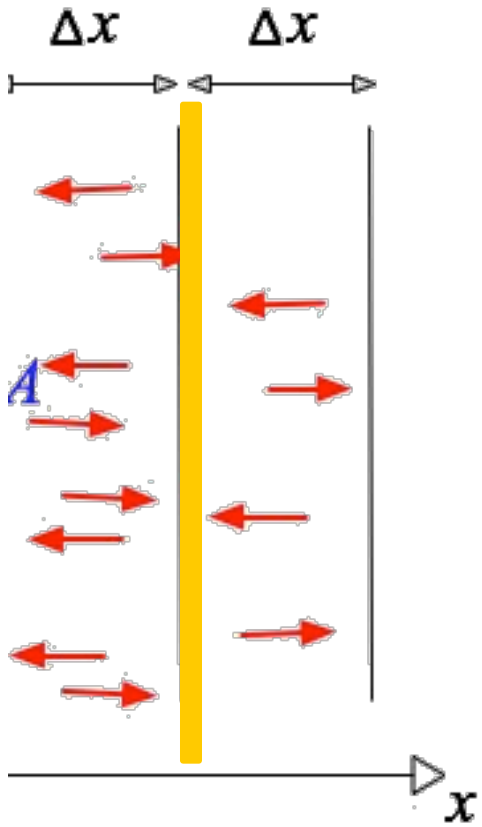
If the probability is equal that, in the next time step, the object moves to any one of the sites in the cube. What is the probability for the *x*-coordinate to change by: +1, 0, or -1? The *y*? The *z*?



Sodium ions are at different densities on the inside and outside of a cell. Assume each ion moves randomly as a result of collisions with other atoms and molecules.

A small patch of membrane (area A) is shown in yellow. There are more ions are on the left than on the right.

What do you expect is true about the ions on the left side of the membrane?



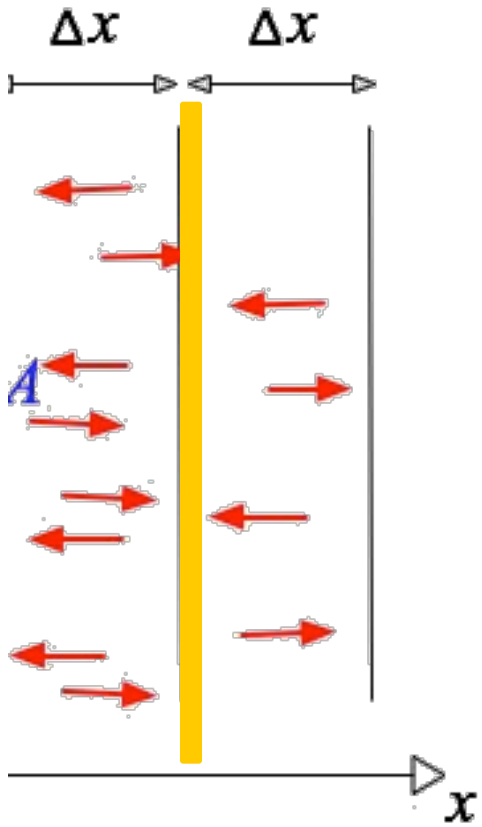
A. More go to the right
B. More go to the left
C. Equal amount goes left and right
D. There is not enough information to tell

Sodium ions are at different densities on the inside and outside of a cell. Assume each ion moves randomly as a result of collisions with other atoms and molecules.

A small patch of membrane (area A) is shown in yellow. There are more ions are on the left than on the right.

What do you expect is true about the ions on the right side of the membrane?

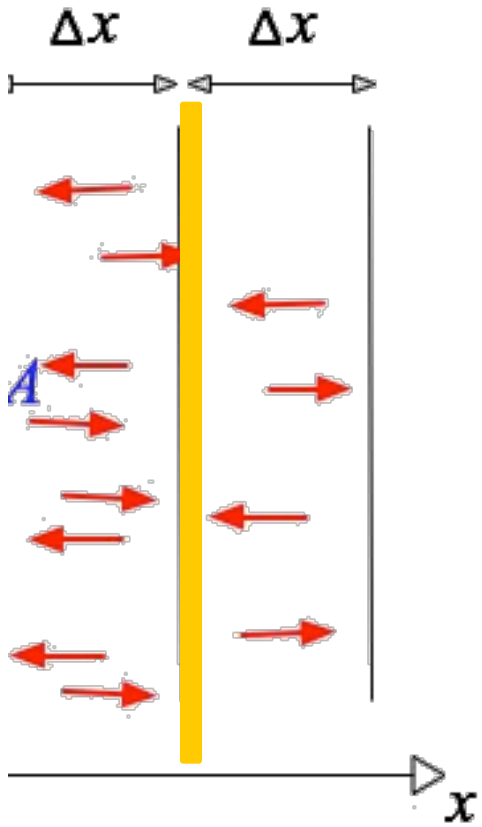
A. More go to the right
B. More go to the left
C. Equal amount goes left
D. There is not enough information to tell



Sodium ions are at different densities on the inside and outside of a cell. Assume each ion moves randomly as a result of collisions with other atoms and molecules.

A small patch of membrane (area A) is shown in yellow. There are more ions are on the left than on the right.

If the membrane allows ions to pass through what do you expect will be true?



A. There will be a net flow of ions to the right
B. There will be a net flow of ions to the left
C. There will be no net flow. Equal amounts will go left and right.
D. There is not enough information to tell

If the average rate at which a 1D particle moves is given by $\left\langle (\Delta x)^2 \right\rangle = 2Dt$ what will be the rate at which it moves in 2D? 3D?

A. $\left\langle (\Delta r)^2 \right\rangle = 2Dt$

B. $\left\langle (\Delta r)^2 \right\rangle = 4Dt$

C. $\left\langle (\Delta r)^2 \right\rangle = 6Dt$

D. Something else