1	2	3	4	n	n'	$C(n)$
L	L	L	L	4	0	1
L	L	L	R	3	1	4
L	L	R	L	3	1	
L	R	L	L	3	1	
R	L	L	L	3	1	
L	L	R	R	2	2	6
L	R	L	R	2	2	
L	R	R	L	2	2	
R	L	L	R	2	2	
R	L	R	L	2	2	
R	R	L	L	2	2	
L	R	R	R	1	3	4
R	L	R	R	1	3	
R	R	L	R	1	3	
R	R	R	L	1	3	
R	R	R	R	0	4	1

Table 1.1 Enumeration of the 16 possible ways in which $N = 4$ molecules (denoted by 1, 2, 3, 4) can be distributed between two halves of a box. The letter L indicates that the particular molecule is in the left half of the box, the letter R that it is in the right half. The number of molecules in each of the halves is denoted by n and n', respectively. The symbol $C(n)$ denotes the number of possible configurations of the molecules when n of them are in the left half of the box.

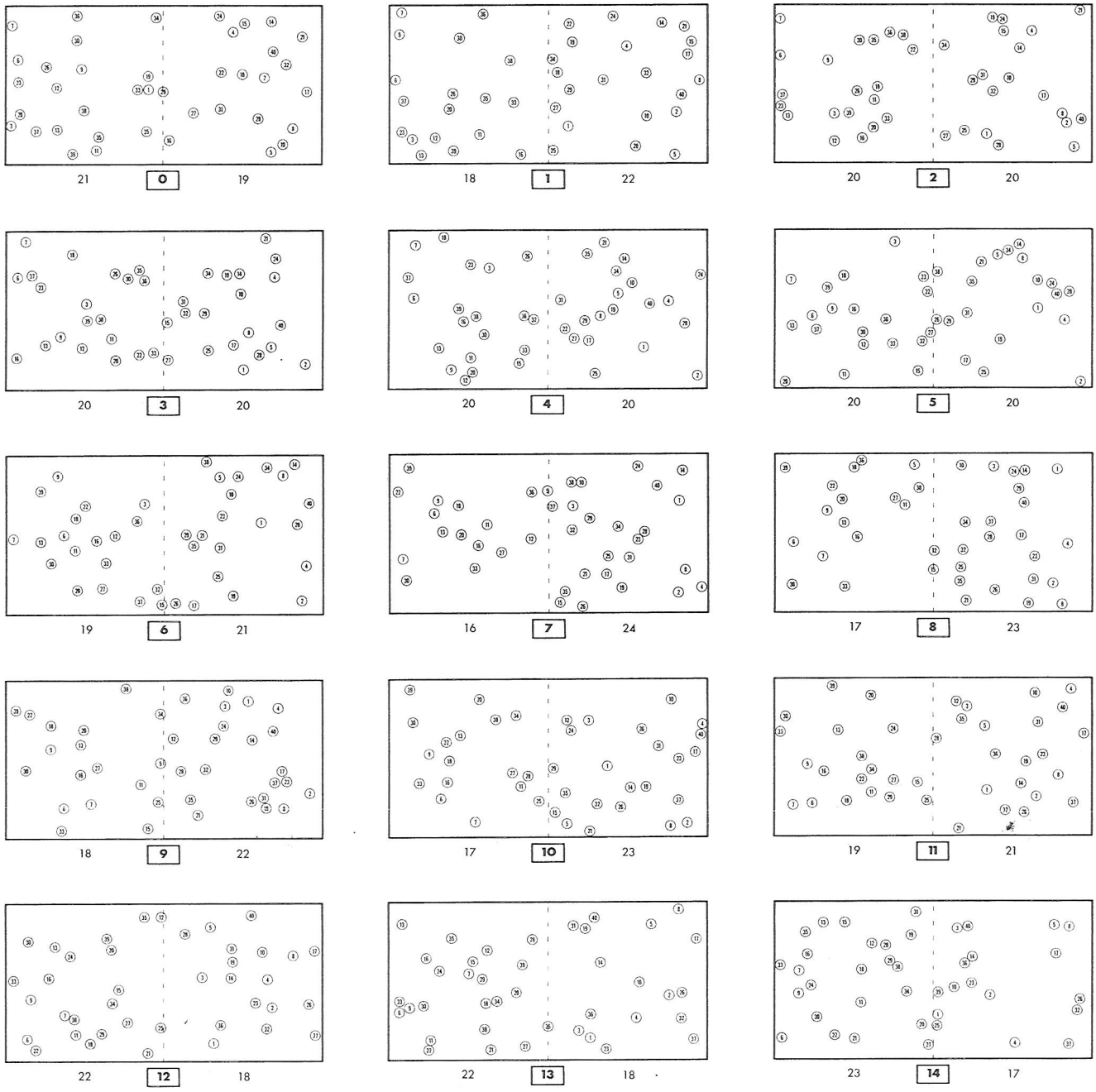
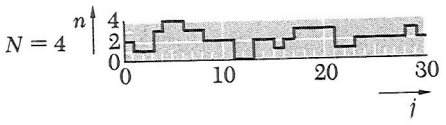


Fig. 1.4 Computer-made pictures showing 40 particles in a box. The fifteen successive frames (labeled by $j = 0, 1, 2, \ldots, 14$) are pictures taken a long time after the beginning of the computation with assumed initial conditions. The number of particles located in each half of the box is printed directly beneath that half. The velocities of the particles are not indicated.

ABSOLUTE #



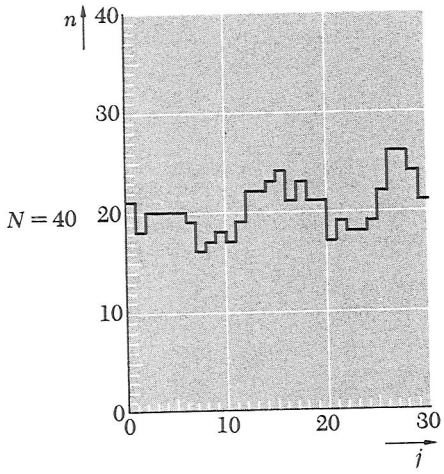
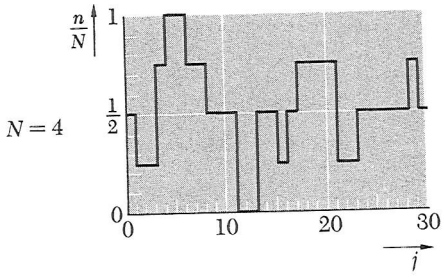


Fig. 1.5 The number n of particles in the left half of the box as a function of the frame index j or the elapsed time $t = j\tau_0$. The number n in the jth frame is indicated by a horizontal line extending from j to $j + 1$. The graphs describe Fig. 1.3 for $N = 4$ particles and Fig. 1.4 for $N = 40$ particles, but contain information about more frames than were shown there.

FRACTION



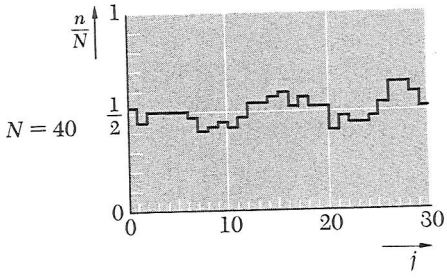


Fig. 1.6 The *relative* number n/N of particles in the left half of the box as a function of the frame index j or the elapsed time $t = j\tau_0$. The information presented is otherwise the same as that in Fig. 1.5.

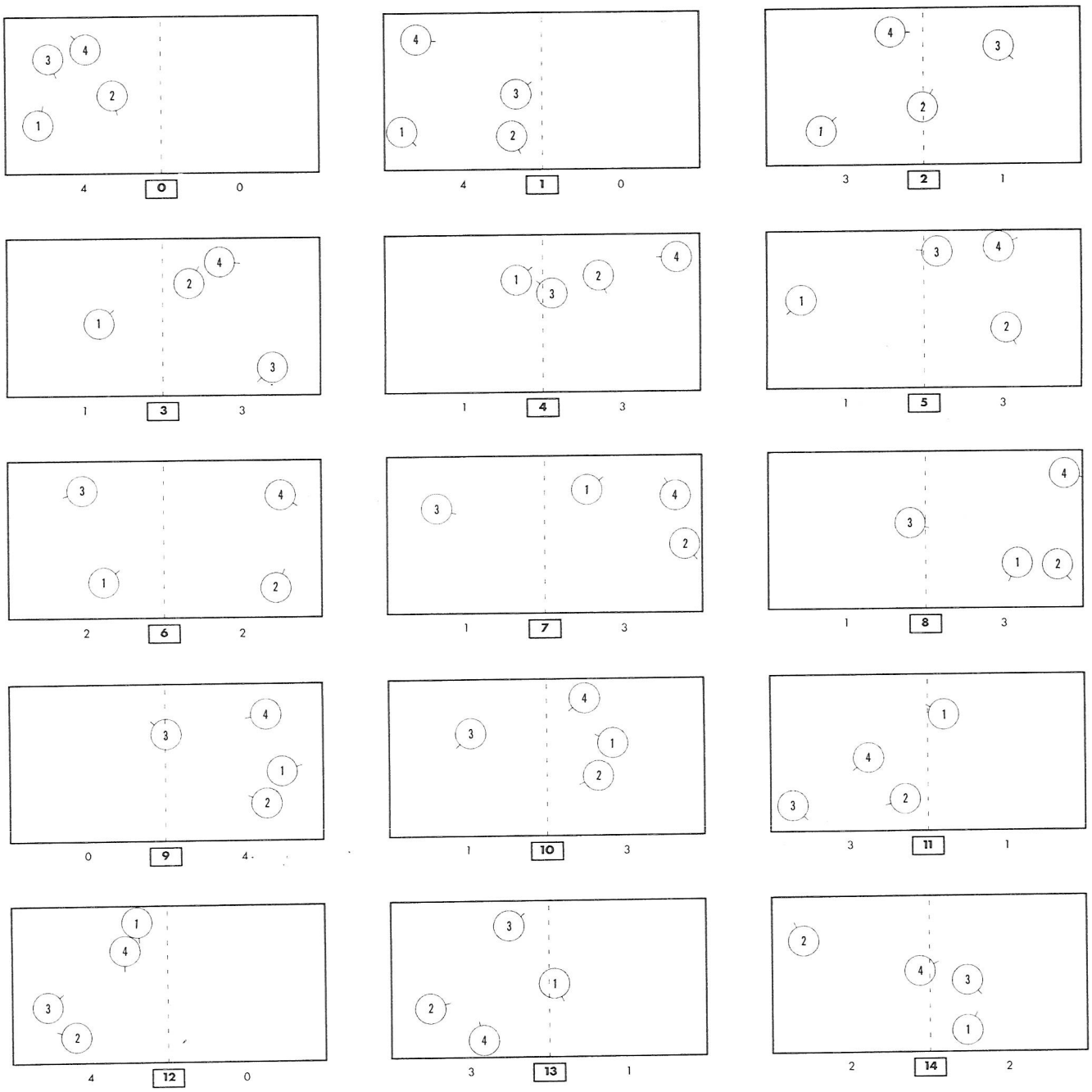


Fig. 1.16 Computer-made pictures showing 4 particles in a box. The pictures were constructed by starting with the special situation where all the particles are in the left half of the box in the positions shown in the frame $j = 0$ and are given some arbitrary assumed velocities. The resulting evolution of the system in time is then shown by the sequence of frames $j = 0, 1, 2, \ldots, 14$. The number of particles located in each half of the box is printed directly beneath that half. The short line segment emanating from each particle indicates the direction of the particle's velocity.

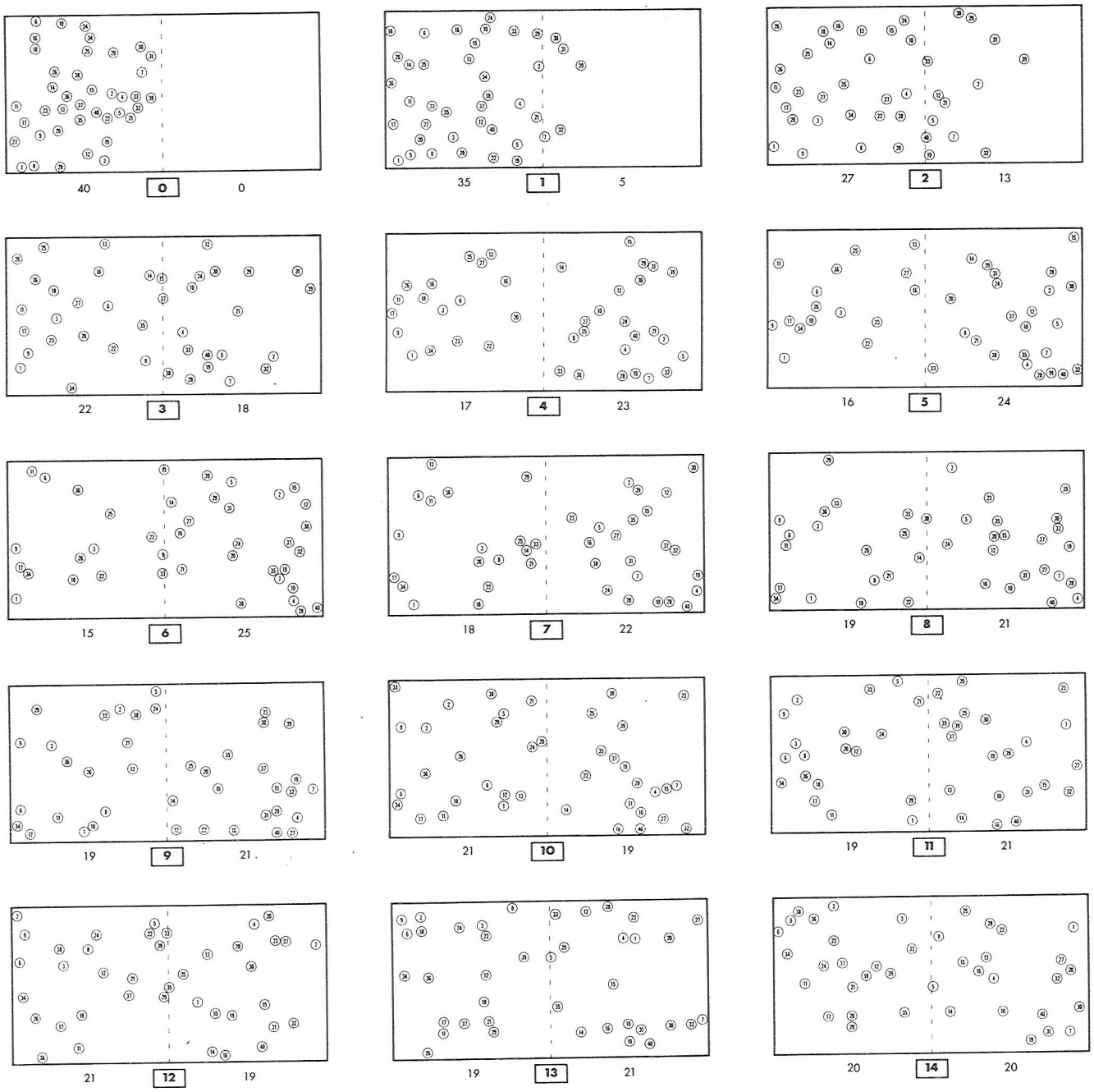


Fig. 1.18 Computer-made pictures showing 40 particles in a box. The pictures were constructed by starting with the special situation where all the particles are in the left half of the box in the positions shown in the frame $j = 0$ and are given some arbitrary assumed velocities. The resulting evolution of the system in time is then shown by the sequence of frames $j = 0, 1, 2, \ldots, 14$. The number of particles located in each half of the box is printed directly beneath that half. No velocities are indicated.