

Unit 1

Lecture 1.2 Quiz

1) For a freely-jointed chain that has 144 steps and a step length of 0.14 nm, calculate the average root mean square end-to-end distance.

- a. 53.9 nm
- b. 1.68 nm
- c. 20.2 nm
- d. 4.49 nm
- e. 2.35 nm

2) An equation that links distance between the starting point of a freely-jointed chain to the ending point of the freely jointed chain is which of the following?

a.
$$\langle h^2 \rangle = nl^2 + \sum_{i=1}^n \sum_{j \neq i}^n \langle \vec{l}_i \cdot \vec{l}_j \rangle$$

b.
$$\langle h^2 \rangle^{1/2} = \langle \vec{h} \cdot \vec{h} \rangle^{1/2} = \left\langle \sum_{i=1}^n \vec{l}_i \cdot \sum_{j=1}^n \vec{l}_j \right\rangle^{1/2}$$

c.
$$\vec{h} = \sum_{i=1}^n \vec{l}_i$$