

- 1 Evaluate $We(10 \text{ quanta}, 4 \text{ molecules})$
 - A $13 \times 12 \times 11 = 1716$
 - B $12 \times 11 = 132$
 - C $13 \times 2 \times 11 = 286$
 - D None of the above
- 2 Evaluate $We(9 \text{ quanta}, 4 \text{ molecules})$
 - A $11 \times 10 = 110$
 - B $10 \times 22 = 220$
 - C $13 \times 11 = 143$
 - D None of the above
- 3 $We(10 \text{ quanta}, 4 \text{ molecules})$ has $286 - 220 = 66$ more arrangements than $We(9 \text{ quanta}, 4 \text{ molecules})$. What is true for the increase going from $We(4 \text{ quanta}, 4 \text{ molecules})$ to $We(5 \text{ quanta}, 4 \text{ molecules})$?
 - A Greater than 66
 - B 66
 - C Less than 66
- 4 The change $We(9,4) \rightarrow We(10,4)$ is 66, and the change $We(4,4) \rightarrow We(5,4)$ is 21. For which change do you expect the entropy increase to be greater?
 - A $We(9,4) \rightarrow We(10,4)$
 - B $We(4,4) \rightarrow We(5,4)$
 - C More information is needed
- 5 The general expression for the entropy change of a 4 molecule system with q quanta gaining 1 quantum is
 - A $We(q+1,4) - We(q,4)$
 - B $\ln\{We(q+1,4)\} - \ln\{We(q,4)\}$
 - C $\ln\{We(q+1,4)/We(q,4)\}$
 - D Both B and C
- 6 Which is larger?
 - A $We(10,4)/We(9,4)$
 - B $We(5,4)/We(4,4)$
 - C More information is needed