# Question 1

A "toy" gas contains three molecules and has a total energy of 3 J. Energy is available to molecules in increments of 1 J.

Consider the arrangement in which each molecule has exactly 1 J of energy. Which of the following is true?

1. This is just as likely as the arrangement where one molecule (don't care which molecule) has exactly 3 J.

2. This is more likely than the arrangement where one molecule (don't care which molecule) has exactly 3 J.

3. This is less likely than the arrangement where one molecule (don't care which molecule) has exactly 3 J.

Question 2

Two collections of "toy model" molecules have the following energy distributions.

Prob A

Prob B

$n_0 \quad n_1 \quad n_2 \quad n_3 \quad n_4$ $\qquad$ $n_0 \quad n_1 \quad n_2 \quad n_3 \quad n_4$
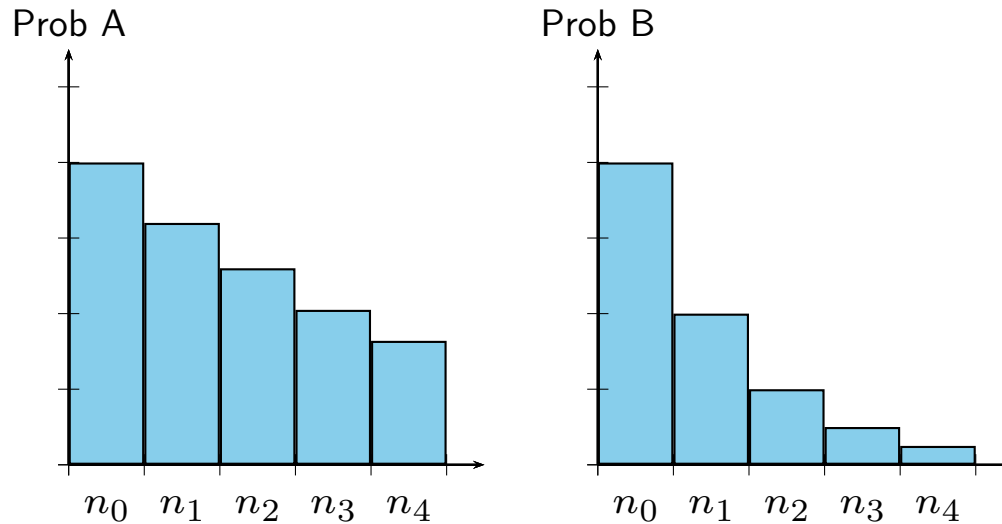
How do the temperatures compare?

1. $T_A = T_B$

2. $T_A < T_B$

3. $T_A > T_B$