1 Factorizability of a distribution function

A hypothetic velocity distribution of an ideal gas has the form

$$G(v) = Ae^{-kv}.$$

Does $G(v)$ satisfy the molecular chaos postulate? Find A from the normalization condition. Find the most probable speed, average speed, and the rms speed. Find the distribution function $g(v_x)$. Check if G factorizes as $G(v) = g(v_x)g(v_y)g(v_z)$.