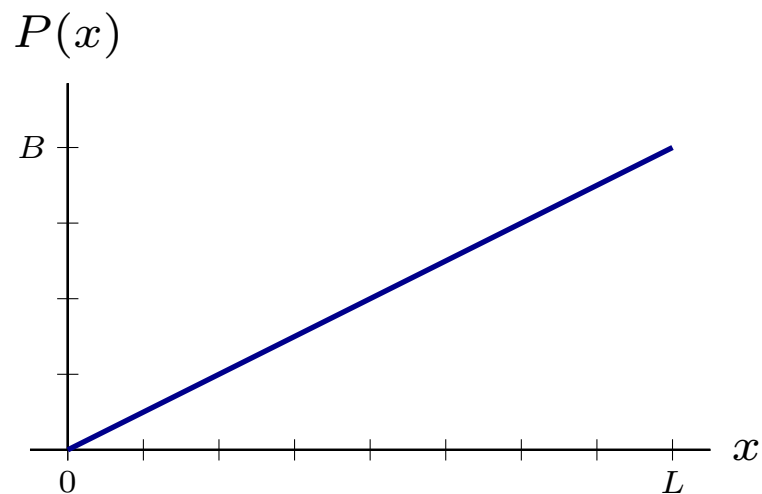


Question 1

An object is restricted to the x axis in the region $0 \leq x \leq L$. The probability density for locating it at various positions is as illustrated.

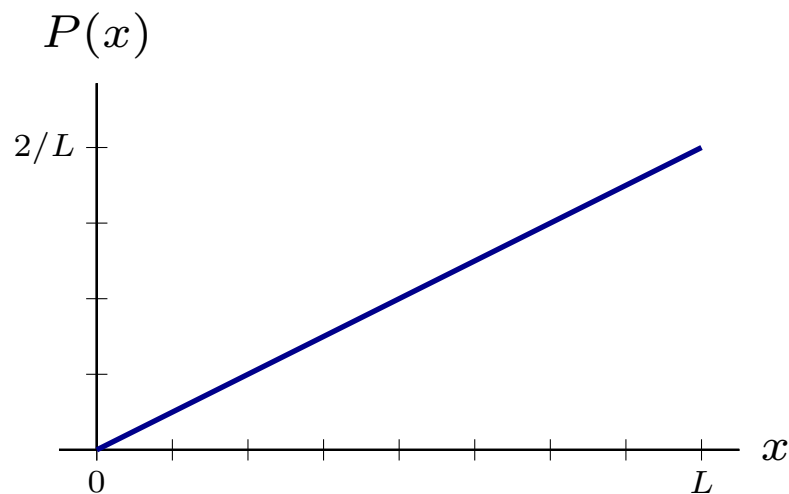


Which of the following represents the maximum of the probability density, B ?

1. $B = 0$
2. $B = 1$
3. $B = L$
4. $B = \frac{L}{2}$
5. $B = \frac{1}{L}$
6. $B = \frac{2}{L}$

Question 2

An object is restricted to the x axis in the region $0 \leq x \leq L$. The probability density for locating it at various positions is as illustrated.



Consider the probability that $0 \leq x \leq L/2$. Which of the following is true?

1. $\text{Prob} \left(0 \leq x \leq \frac{L}{2} \right) = \frac{1}{8}$
2. $\text{Prob} \left(0 \leq x \leq \frac{L}{2} \right) = \frac{1}{4}$
3. $\text{Prob} \left(0 \leq x \leq \frac{L}{2} \right) = \frac{1}{2}$
4. $\text{Prob} \left(0 \leq x \leq \frac{L}{2} \right) = \frac{3}{4}$