prb8_bitVector

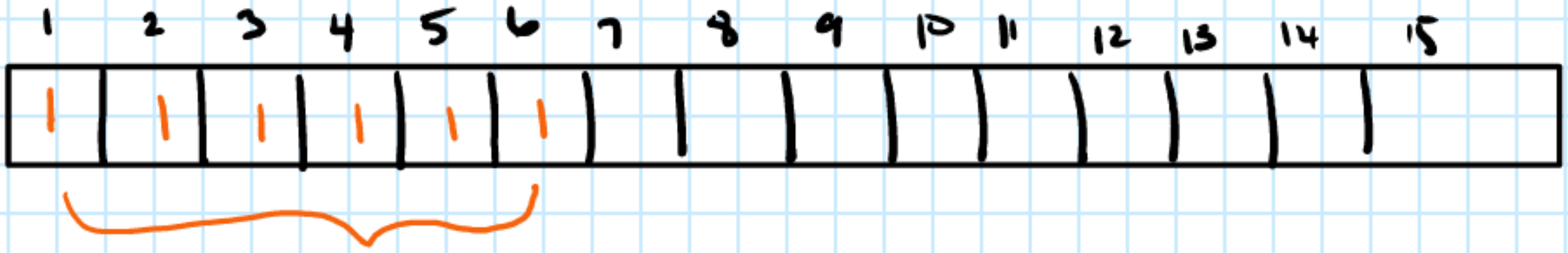
Monday, October 30, 2023 12:09 AM

40% vector filled

sample size = |40|

$$C(n,r) = \binom{n}{r} = \frac{n!}{r!(n-r)!}$$

Probability 5 bits all fall within the filled section?



40% filled

$$C\binom{40}{5} = \frac{40!}{5!35!}$$

$$= \frac{40\ 39\ 38\ 37\ 36\ 35!\ 34\ldots}{5!\quad 35!}$$

$$= \frac{40 \cdot 39 \cdot 38 \cdot 37 \cdot 36}{5!}$$

$$= \frac{78960960}{120}$$

possible ways to fill the 40% filled section of the vector = 658,008