Question #71922, Math / Statistics and Probability

In a hospital 60% of the patients are married. What's the probability that a sample of one word with 8 patient, had 3 were married

Solution

Assuming the sample size of 8 is less than 5% of the total number of patients in the hospital.

Using binomial probability formula.

$$p(x)=\frac{n!}{(n-x)!x!}p^x q^{n-x};$$

$$p(3)=\frac{8!}{(8-3)!3!}0.6^3 0.4^{8-3}=0.1239$$

Answer: the probability that in a random sample of 8 patients 3 are married is 0.1239.