

Answer on Question #62758 – Math – Statistics and Probability

Question

1. If 20% of patient being treated with a type of malaria drug suffered a bad reaction, find the probability in the treatment of 10 patients, 2 will suffer a bad reaction.

Solution

Suffering a bad reaction follows the binomial distribution with parameters

$$p = 0.2 \text{ and } n = 10.$$

The probability that 2 will suffer a bad reaction is

$$P(X = 2) = \binom{10}{2} 0.2^2 (1 - 0.2)^8 = \frac{10!}{2!8!} 0.2^2 (1 - 0.2)^8 = 0.3020.$$

Answer: 0.3020.

Question

2. In measuring the height of some rabbit, the mean was 72 and the standard deviation was 15, calculate the standard height of rabbits having a height of 93.

Solution

The standard height of rabbits is

$$Z = \frac{X - \mu}{\sigma} = \frac{93 - 72}{15} = 1.4.$$

Answer: 1.4.