

Answer on Question #71846 – Math – Statistics and Probability

Question

Given that 51.3% of all newly born children are boys, then what is the probability that in a sample of 5 newly born children, exactly 3 are boys?

Solution

$$P(3 \text{ boys}) = \binom{5}{3} p^3 q^2 = \frac{5!}{3!(5-3)!} \times 0.513^3 \times (1 - 0.513)^2 = \frac{5!}{3! \times 2!} \times 0.513^3 \times 0.487^2 = 0.3202$$

Answer: $P(3 \text{ boys}) = 0.3202$.