Answer on Question #74475 – Math – Statistics and Probability.

Question

If there are 3 children in a family, what is the probability that it is a boy?

Solution

A family has 3 children, each of whom is a boy or a girl with probability $\frac{1}{2}$.

Let A = " there is a boy". Then $\overline{A}$ = “all are girls”. Then

$$P(\overline{A}) = \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{8} \text{ and } P(A) = 1 - P(\overline{A}) = 1 - \frac{1}{8} = \frac{7}{8}.$$

Hence, the probability that there is a boy equals $\frac{7}{8}$.

Answer: $\frac{7}{8}$.