

Answer on Question #76493 – Math – Statistics and Probability

Question

About $\frac{1}{5}$ of all adults in the United States have type O+ blood. If three randomly selected adults donate blood, find the probability of each of the following events . (round your answer to four decimal points)

- A) All three are type O+
- B) None of them are type O+
- C) Two out of three are type O+

Solution

A)

$$P = \frac{1}{5} \cdot \frac{1}{5} \cdot \frac{1}{5} = 0.2^3 = 0.0080.$$

B)

$$P = \left(1 - \frac{1}{5}\right) \left(1 - \frac{1}{5}\right) \left(1 - \frac{1}{5}\right) = 0.8^3 = 0.5120.$$

C)

$$P = \binom{3}{2} \cdot 0.2^2 \cdot (1 - 0.2) = 3 \cdot 0.04 \cdot 0.8 = 0.0960.$$

Answer: A) 0.0080; B) 0.5120; C) 0.0960.