18th January 2023

Back to(?) Statistician Joke →

The Statistician computed the probability of having a bomb B_1 on the plane. Let's say $P(B_1) = p$

Apparently, under the assumption of independence, he computed the probability of having two bombs on the plane.

$$P(B_1 \cap B_2) = P(B_1)P(B_2) = p^2$$

Instead, he must have computed,

$$P(B_2 | B_1) = \frac{P(B_1 \cap B_2)}{P(B_1)} = \frac{p^2}{p} = p$$

As he already has carried a bomb

The former is true if we do not know that there is one bomb.

Erdös (1976) Conjecture : Given $m \in \mathbb{N}$, $m \geq 3$ any sequence $\{\alpha_n\}$ ~~will be~~ with $\alpha_n \in \mathbb{N}$ s.t $\sum_{n=1} \frac{1}{\alpha_n} = \infty$, we have an arithmetic progression of length m in $\{\alpha_n\}$

Ex : 2, 3, 5, 7, 11

$\sum_{p \leq n} \frac{1}{p}$ diverges

$\int$

$\log \log N$ growth

$\{3, 5, 7\}$ AP of length 3

⋮

→ Intense digression to Riemann Hypothesis.