Kaan Aksoy — Feb 10, 2020

The Flippant Juror

The 3-person jury makes its decisions based on majority rule. Jurors A and B each have probability p of making the right decision, while Juror C has a probability of $\frac{1}{2}$ of making the right decision. The cases where they make the right decision are as follows (where R represents a right decision, and W represents a wrong one):

Juror A	Juror B	Juror C
R	R	R
R	R	W
R	W	R
W	R	R

Summing the probabilities of these 4 individual cases gives:

$$\frac{p^2}{2} + \frac{p^2}{2} + \frac{p(1-p)}{2} + \frac{p(1-p)}{2} = p$$

Thus, the 1-person and 3-person juries both have the same probability of making the right decision.